

TECHNOLOGY

REVIEW *November 1950*



technology review

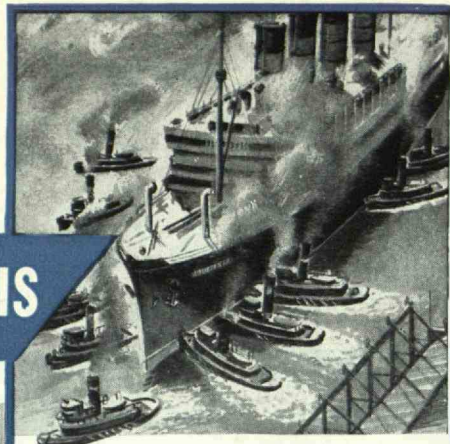
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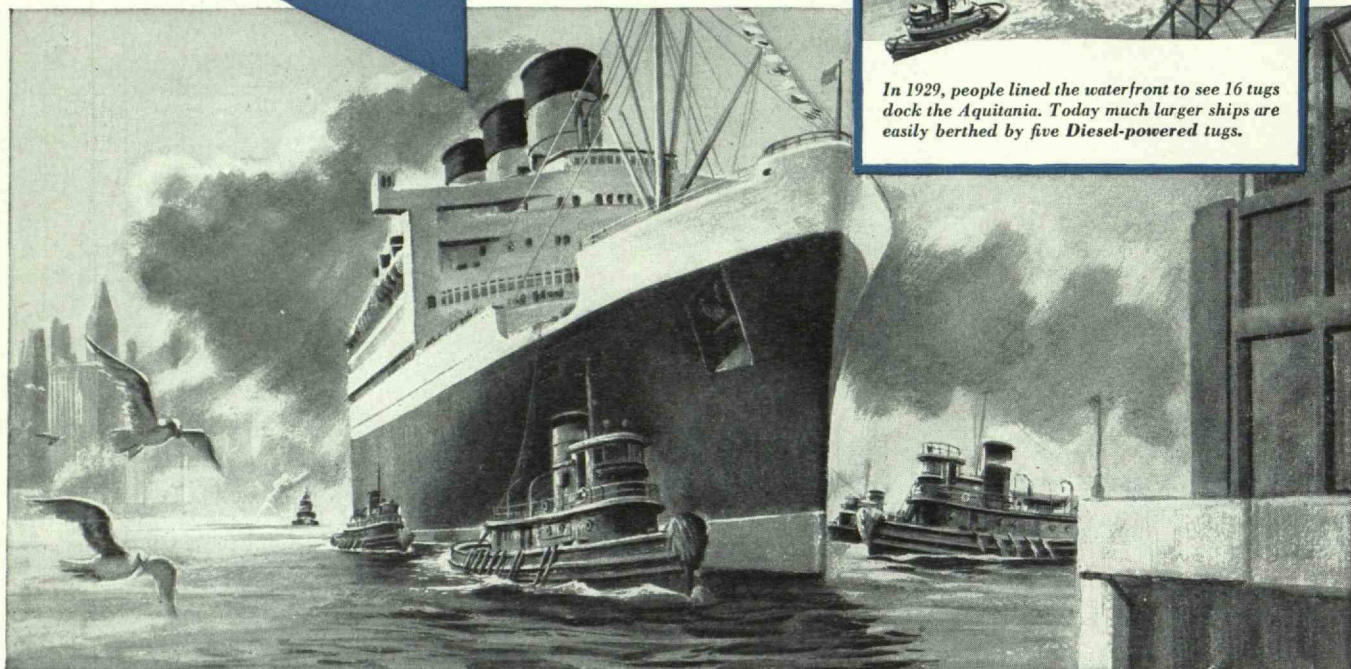
What important thing was necessary

to **THIS**

to change **THIS**



In 1929, people lined the waterfront to see 16 tugs dock the Aquitania. Today much larger ships are easily berthed by five Diesel-powered tugs.



1. Development and Field Engineering.

American Bosch engineering departments and laboratories work constantly to improve existing products, develop new ones such as the revolutionary single plunger multi-cylinder PSB Pump. Our field engineers work hand in hand with engine and equipment manufacturers — from original design to test models and actual field operation.

2. Precision Manufacture.

The knowledge and craftsmanship that made solid fuel injection a reality . . . plus engineering research, proven techniques, unparalleled production and testing facilities (many of them initiated and developed here) . . . insure uniform adherence to the highest standards of accuracy and performance.

3. Service Organization.

In many U.S. cities and at strategic points throughout the world, American Bosch maintains an ever-growing network of authorized service stations. Staffed by personnel trained to factory standards, with factory-designed and built testing equipment, they are prepared to render efficient and reliable service whenever needed.



Dependable Fuel Injection

Many things — and many men — have contributed to the progress of Diesel power. But one vital element necessary to make this efficient, economical source of power universally applicable was dependable solid fuel injection.

American Bosch was a pioneer and still is a leader, in this field . . . a position established and maintained by American Bosch development and field engineering, precision manufacture and its ever-expanding network of service agencies.

You can depend on premium performance when the fuel injection system bears the name American Bosch.

American Bosch

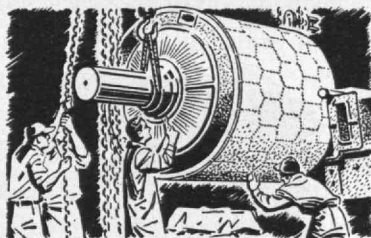
Dependable Fuel Injection for the Diesel Industry
AMERICAN BOSCH CORPORATION, SPRINGFIELD 7, MASS.



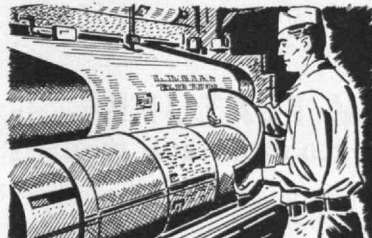
YOUNG PETE ERICKSON, shown at the left with his father, Norton worker Earl Erickson, asked what makes paper...and really got the answers! Earl, incidentally, has been with Norton more than 16 years, as have more than one third of his fellow workers.

"WHERE ARE ALL THOSE CIRCLES GOING, DAD?"

"Down Lake Superior, son. Those logs were trees in Canada. Now they're on their way to become paper. And my work helps right from the start... when trees are cut with axes and saws sharpened by Norton products."



"THE GIANT GRINDING WHEEL these men are installing is a Norton pulstone. Grinding is one method of converting wood to paper — changing the logs into long, tough fibres that give strength to many types of paper.



"DAILY NEWSPAPERS are printed on huge presses like this whose working parts are ground and finished by Norton grinding wheels. Norton wheels also sharpen paper knives, cutter knives, slitters, etc., used in the paper industry.

"KNOW SOMETHING ELSE? Norton gives to many other industries the same kind of vital aid it gives to the paper industry. You see, Norton is the world's largest manufacturer of abrasives."

Grinding wheel distributors in over 300 cities of the world; warehouses in five cities of the United States; branch grinding wheel plants in six foreign countries.



TRADE MARK REG. U. S. PAT. OFF.

Making better products to make other products better



NORTON COMPANY, WORCESTER 6, MASSACHUSETTS

BEHR-MANNING, TROY, N. Y. IS A DIVISION OF NORTON COMPANY

FIRST NEW DEVELOPMENT IN SINGLE DECK ROOFS IN 20 YEARS

GRAVER

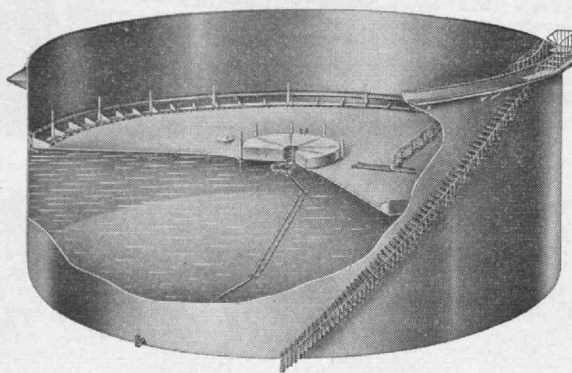
CENTER-WEIGHTED FLOATING ROOF TANKS

Patented design combines the stability and the vapor-saving, corrosion-resistant features of the double-deck floating roof with the more economical aspects of the conventional pan-type roof.

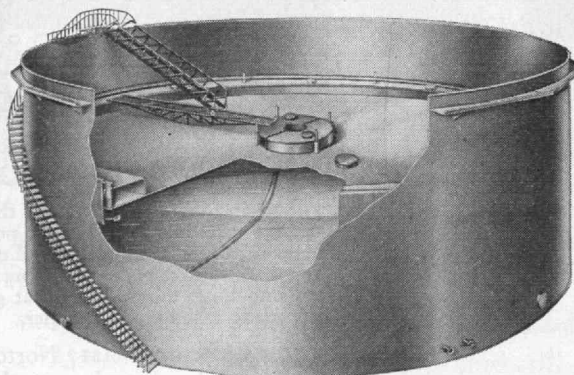
NEW FEATURES FOR IMPROVED PETROLEUM STORAGE

- Non-tilting, non-sinking; center of gravity below center of buoyancy.
- Fully effective single seal—no springs; nothing to get out of order.
- No air pockets under deck; full rim immersion—roof floats directly on product—no space for vapors to form.
- Requires *less steel* to build.
- Positive drainage at center due to increasing slope.
- Clear deck permits full accessibility, easy snow removal.
- Proved construction—tested in actual installations.

Send for New Book on Graver Center-Weighted Floating Roofs.



PAN-TYPE Center-Weighted Floating Roof... for southern climates where rain is the only weather problem.



PONTOON Center-Weighted Floating Roof... for northern climates involving snow, ice and rain.

**FABRICATED PLATE DIVISION
GRAVER TANK & MFG. CO., INC.**

EAST CHICAGO, INDIANA

NEW YORK • PHILADELPHIA • CHICAGO
DETROIT • CINCINNATI

CATASAUQUA, PA. • HOUSTON • SAND SPRINGS, OKLA.

IT'S THE MAGIC OF THE FLAME....

It's the magic of the flame that creates carbon black, the mysterious black ingredient which adds wearability, durability, stretch and bounce to rubber . . . new life to inks, paints, varnishes, lacquers and plastics.

Cabot began probing the secrets of the flame in 1882 and since that time has never ceased expanding its research activities. By learning to control the flame and direct its burning, Cabot was able at an early stage to produce gradations of the elementary carbon black material.

Following long years of careful study and experimentation, Cabot now produces more than forty different grades of carbon black, each carefully developed and processed to fill a specific industrial need, and each measuring up to the same high standards of uniform high quality.

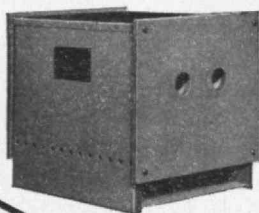
Thousands of Cabot flames burn night and day to provide the basic carbon material from which Cabot blacks are made. Cabot control and processing convert this raw material into the greatest variety of high quality carbon blacks available to modern industry.



GODFREY L. CABOT, INC.

77 FRANKLIN STREET, BOSTON 10, MASSACHUSETTS



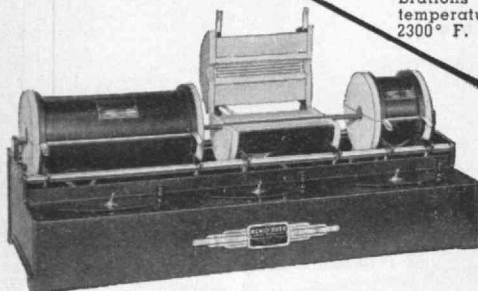


6 TYPES in 18 SIZES

HEVI DUTY COMBUSTION TUBE FURNACES

Hevi Duty High Temperature Combustion Tube Furnace

One or two tubes—for operations to 2300° F. (1260° C.)—used for carbon and standard combustions—analysis—checking and calibrations which require temperatures from 1100° to 2300° F. (1260° C.)



Multiple Unit Organic Combustion Furnace

Sections four, eight and twelve inches long—each with separate rheostat control—operations up to 1832° F. (1000° C.)—an outstanding achievement for accuracy and ease in operation.

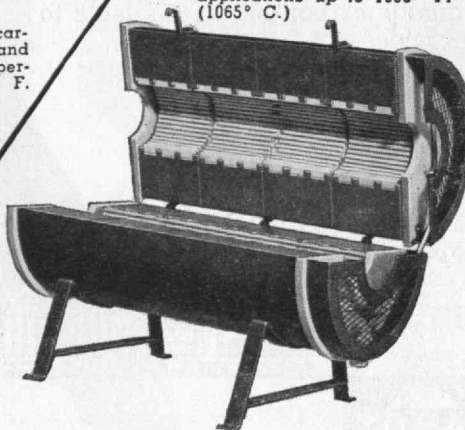


Hevi Duty Five Tube Combustion Furnace

For continuous service at high temperatures—to 2000° F. (1093° C.)—not generally used for intermittent work.

Multiple Unit Solid Combustion Tube Furnace

10 standard sizes—for carbon determinations and special heat treating operations up to 1950° F. (1065° C.)

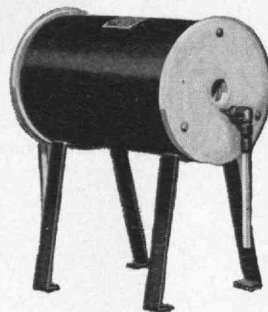


Multiple Unit Hinged Combustion Tube Furnace

10 standard sizes—for carbon determinations. Special organic analysis and special applications up to 1950° F. (1065° C.)

Hevi Duty Solid Combustion Tube Furnace

standard sizes—for carbon determination work and other combustion tube furnace operations but constructed for continuous use at higher temperatures to 2000° F. (1093° C.)



HEVI DUTY Combustion Tube Furnaces
have been standard in most laboratories for over thirty years. The various types provide for all combustion tube furnace operations at temperatures from 1100° F. (592° C.) to 2300° F. (1260° C.). Each type has the exclusive feature of a multiple number of heating units readily replaceable by the user. See your laboratory supply dealer or ask for Bulletins HD-738, 138 and 1236.

The Standard in Most Laboratories

HEVI DUTY ELECTRIC COMPANY

LABORATORY FURNACES

TRADE MARK
MULTIPLE UNIT

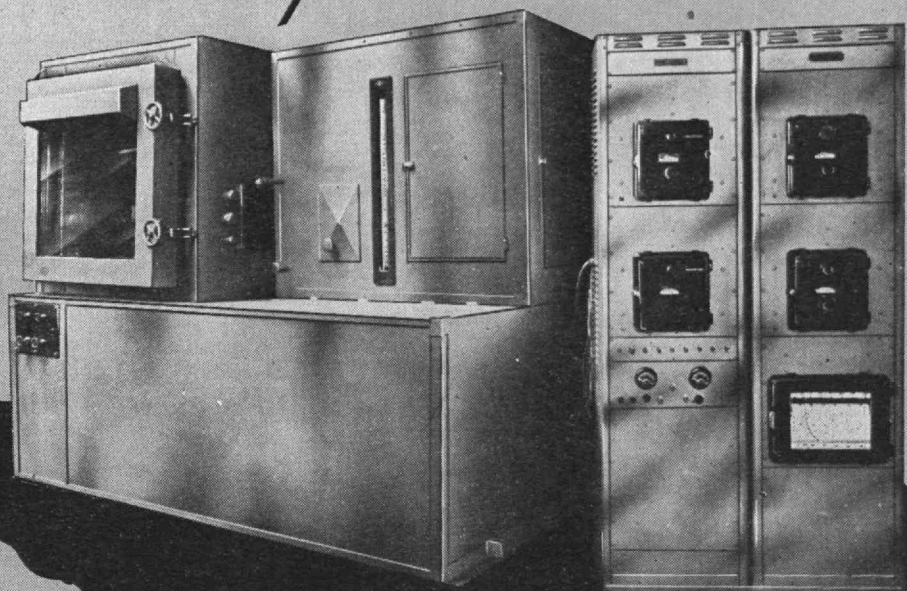
ELECTRIC EXCLUSIVELY

REG. U. S. PAT. OFF.

MILWAUKEE 1, WISCONSIN



Atmosphere unlimited...

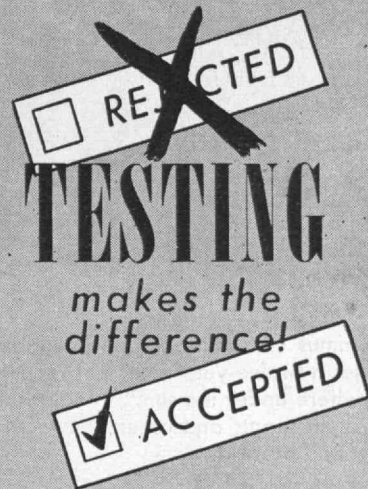


All-weather testing will

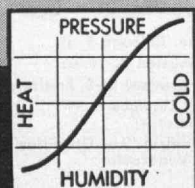
PROVE YOUR PRODUCT

Assure maximum value from each research dollar invested and from every hour of human effort expended in your development or manufacturing program by relying on Northern-Zaleski test chambers for complete, accurate test data—the soundest foundation on which to base your operation.

Northern-Zaleski atmospheric test chambers (with fully automatic cycling and recording systems, if desired) are your assurance of complete dependability and highest precision in meeting all test requirements. Temperature ranges of -150°F. to $+200^{\circ}\text{F.}$, humidity ranges of 10% to 98%, and simulated altitude ranges of 0 to 100,000 feet are available in standard chambers of from 3 to 800 cubic feet. Field construction to 25,000 cubic feet.



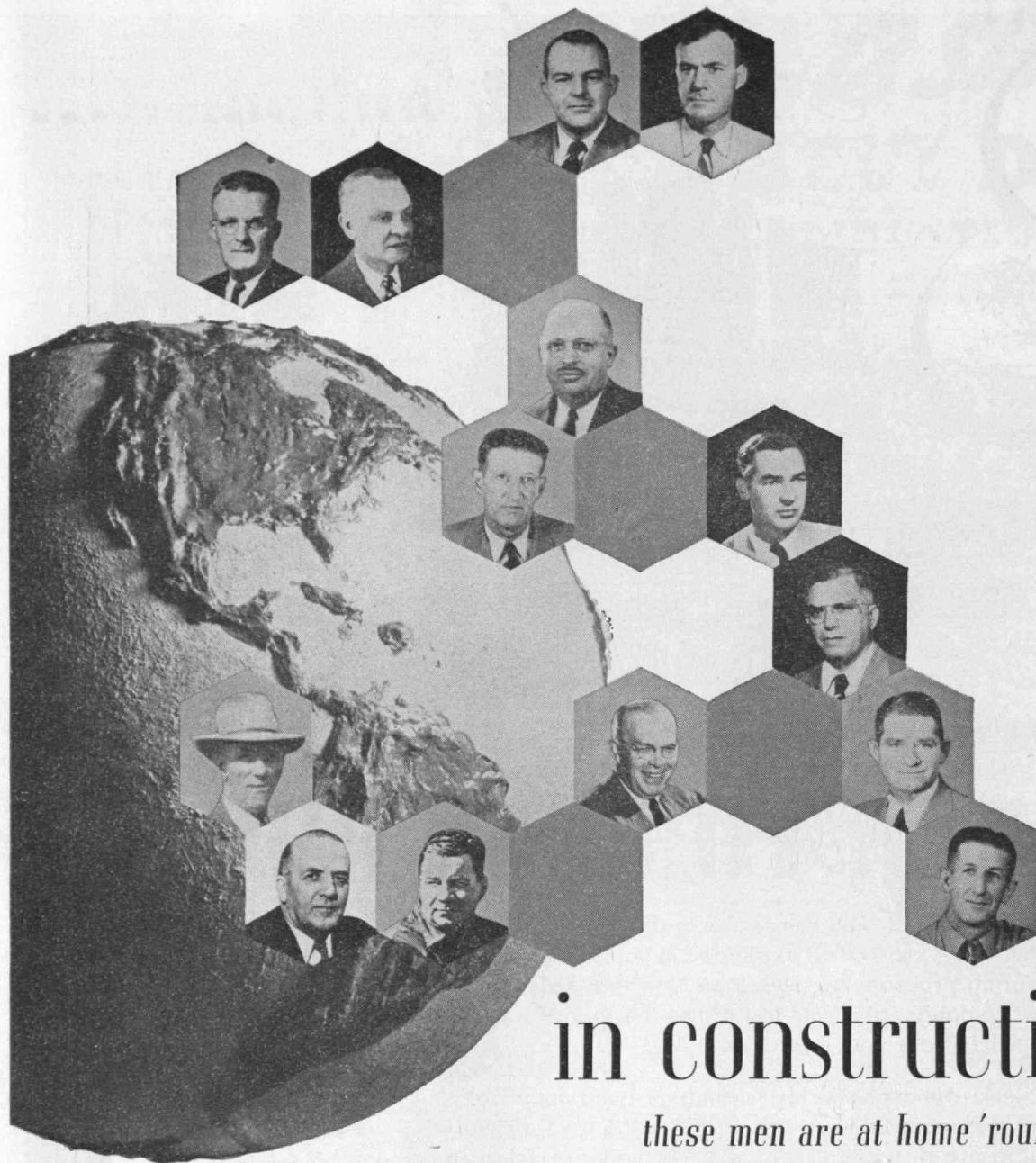
- Laboratory facilities to run JAN spec tests
- Research and development services available
- Test chamber repair-rebuilding-maintenance



Dr. A. E. Surosky, 1941, Vice President

Northern-Zaleski Limited

PRATT OVAL, GLEN COVE, LONG ISLAND, N. Y.



in construction

these men are at home 'round the world

The Lummus construction superintendent and field engineer averages a twelve-year record of refinery building, literally—"everywhere under the sun." In addition, he has seen service at chemical plants and other heavy construction both in this country and abroad.

In a period of rapid progress, he has contributed to new techniques: the pre-assembly of pipe and equipment before erection, the raising of heavy vessels to greater heights and the providing of means to facilitate future maintenance and "turn around." Refinements in the scheduling of the erecting sequence are an outgrowth of his experience.

Behind Lummus' "ahead of time" deliveries stands the Construction Man. Because he has learned to *anticipate* the problems of remote location, emergencies seldom arise. But the records show that his decisions, made on-the-spot to meet the unexpected, reveal sound judgement and a steady hand. The low labor turnover, reflecting the high morale of his crews, both American and native, is evidence of his human as well as his technical understanding.

During the war he constructed, in record-breaking time, ordnance plants, high octane gasoline plants and plants that produced the raw materials for synthetic rubber. Today, the Lummus Construction Man is combining *time savings* with *dollar savings* in new projects throughout the world.

THE LUMMUS COMPANY
385 Madison Avenue, New York 17, N. Y.

LUMMUS

CHICAGO—600 South Michigan Avenue, Chicago 5, Ill.

HOUSTON—Mellie Esperson Bldg., Houston 2, Texas

The Lummus Company, Ltd., 525 Oxford St., London, W-1, England

Société Française des Techniques Lummus

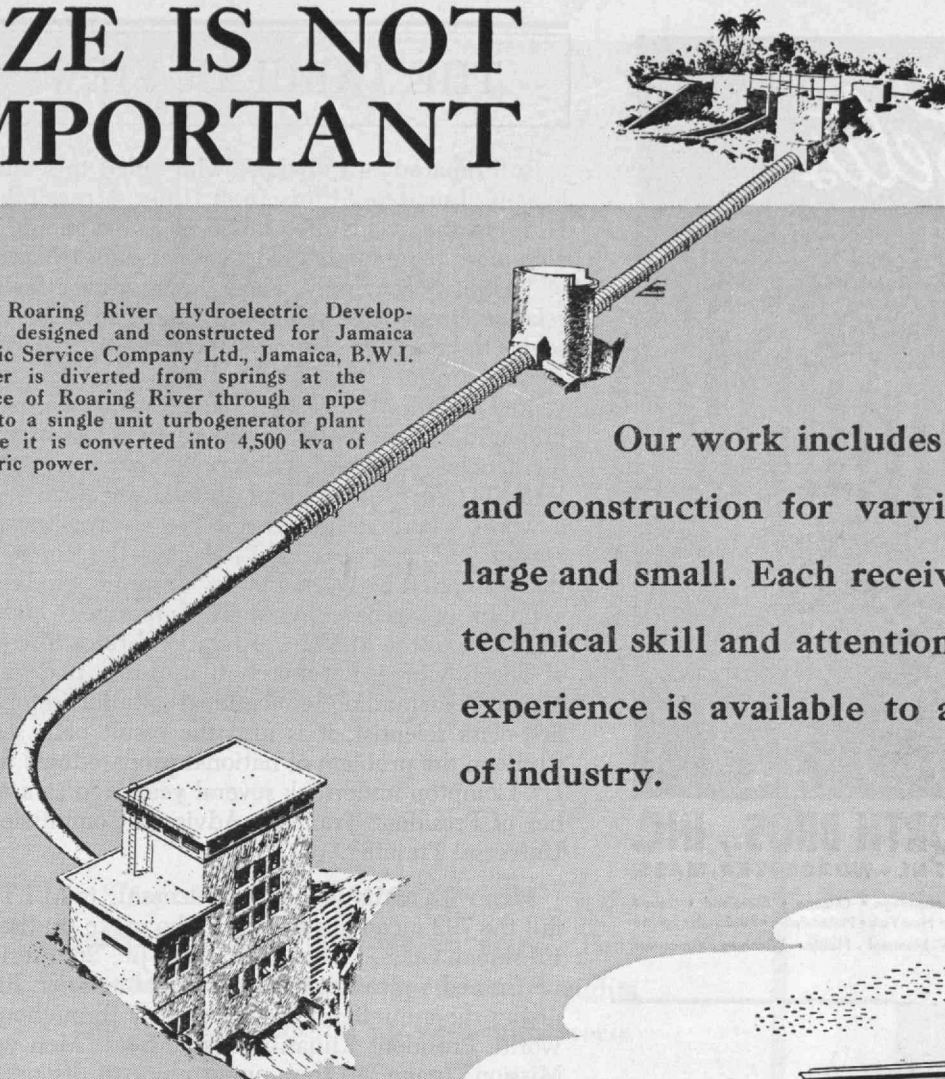
39 Rue Cambon, Paris 1er, France

Compañía Anónima Venezolana Lummus—Edificio "Las Gradillas"
Esquina Las Gradillas, Caracas, Venezuela



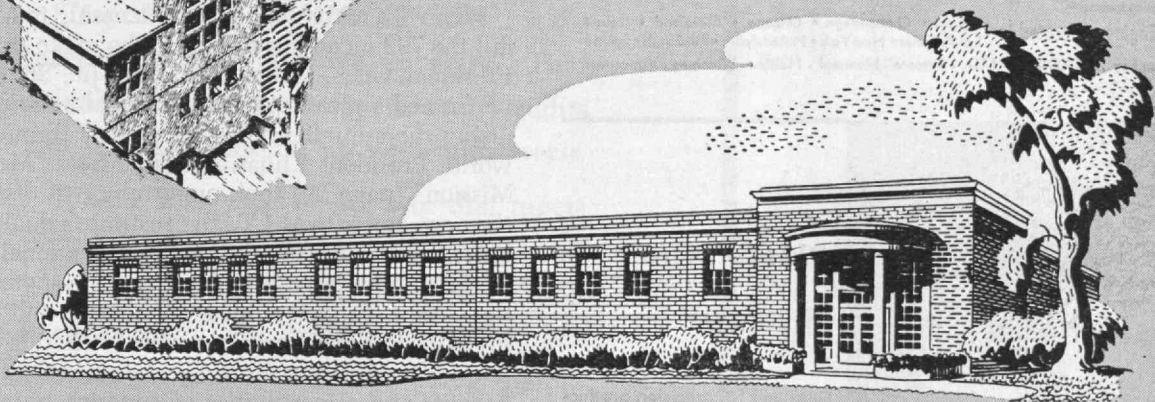
SIZE IS NOT IMPORTANT

The Roaring River Hydroelectric Development designed and constructed for Jamaica Public Service Company Ltd., Jamaica, B.W.I. Water is diverted from springs at the source of Roaring River through a pipe line to a single unit turbogenerator plant where it is converted into 4,500 kva of electric power.

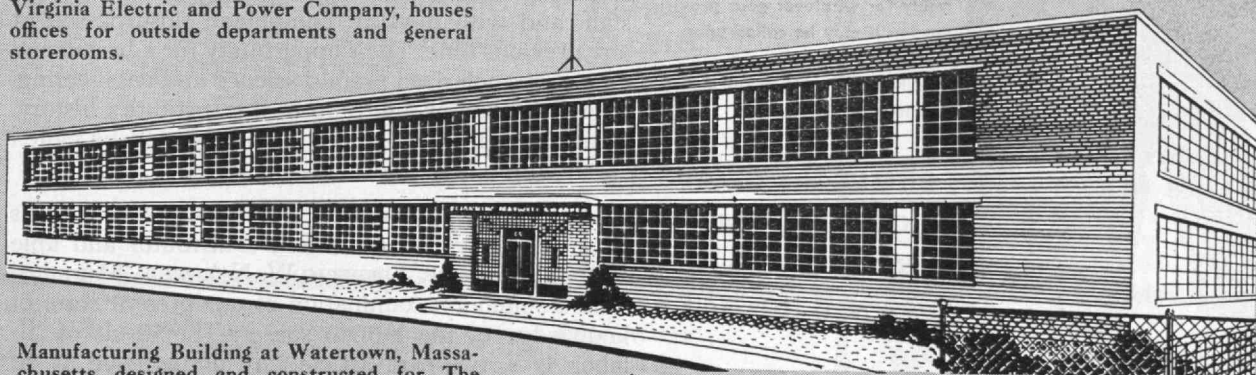


Our work includes engineering and construction for varying projects, large and small. Each receives the same technical skill and attention. Our broad experience is available to all branches of industry.

This Service Building for Alexandria and Arlington Area, designed and constructed for Virginia Electric and Power Company, houses offices for outside departments and general storerooms.



Manufacturing Building at Watertown, Massachusetts designed and constructed for The Prudential Insurance Company for occupancy by Manning, Maxwell & Moore, Inc. The total floor area is 136,000 sq. ft.



STONE & WEBSTER ENGINEERING CORPORATION

A SUBSIDIARY OF STONE & WEBSTER, INC.

Metal Belts

for the handling
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THE TABULAR VIEW

Be Prepared. — For those who failed to learn the lessons of modern history from Hitler, Mussolini, and Hirohito the events of June 25 in Korea should provide more than ample evidence that unprovoked acts of hostility occur only when the aggressor feels his relative strength is such as to assure success. There seems to be a high degree of probability that war in Korea — or in Indo-China — might have been prevented had the Western democracies been adequately prepared to “speak softly and carry a big stick.” In his article “Universal Military Training” (page 17) KARL T. COMPTON makes it abundantly clear that, in a world where force has not yet always bowed to reason “the practical choice facing the country is, therefore, that between a policy of unpreparedness or a policy of preparedness.” The message which the chairman of the M.I.T. Corporation brings to readers of The Review is not merely that of a public-spirited citizen, outstanding educational administrator and first-class scientist, it is also the result of a serious study on the problem of national preparedness which Dr. Compton undertook several years ago as a member of President Truman's Advisory Commission on Universal Training.

Men with a Mission. — In welcoming to M.I.T. this fall the 792 incoming students who make up the new Freshman Class, JAMES R. KILLIAN, JR., '26, President, performed a pleasant task in a genial manner. Recognizing the apprehension which exists throughout the world, President Killian in his address “Men with a Mission” (page 20) took opportunity to discuss with the newcomers to M.I.T., the Institute's dual responsibility in carrying out a vigorous educational program while simultaneously increasing its responsibility to the nation. Today's students of science and engineering will do their work in a world suffering the birth pains of internationalism. Yet, because they have the benefits and opportunities of superior training, such groups have a special obligation to society. Today's freshmen come to the Institute with a Faculty and staff, and with physical equipment, unsurpassed at any previous time. Their opportunity for a broadened education, polarized around science and engineering, is greater than at any time in the Institute's history. Thus it is that the Class of 1954 may well be called “Men with a Mission.”

Look to Our Common Senses. — Some months back, The Review's consistent contributor and able editorial associate, FREDERIC W. NORDSIEK, '31 undertook a summary examination of our present state of knowledge of the human senses. The result of his labor is a two-part article “All Experience Is of Change” of which the first portion, dealing primarily with the visual and auditory senses, appears on page 22 of this issue. The concluding installment will appear in the December issue. Mr. Nordsiek's sprightly delvings into the mechanics by which man communicates with his environment provides stimulating read-

(Concluded on page 10)



DIEFENDORF

IS READY . . .

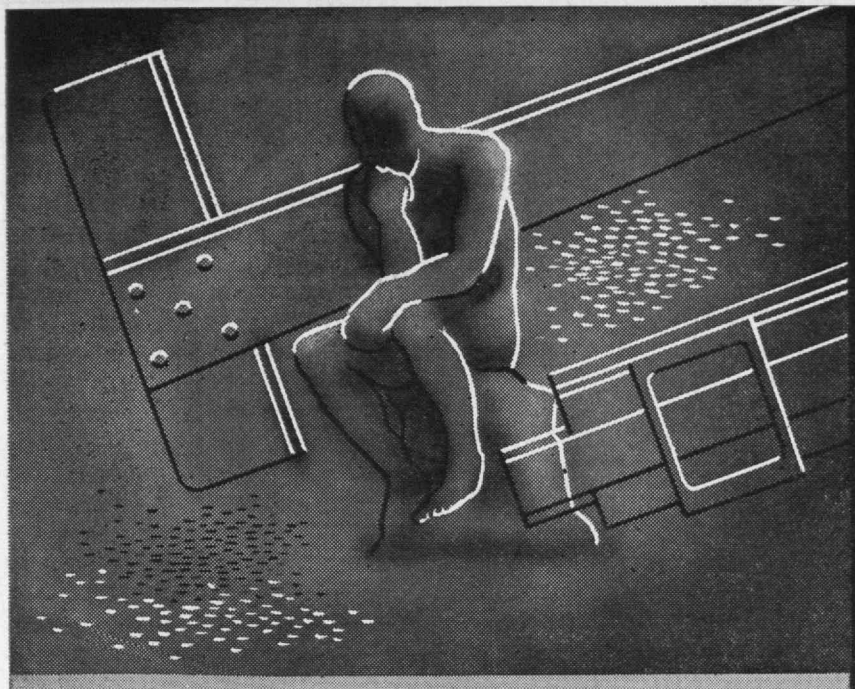
Qualified for precision production by experience on highest quality work—Diefendorf is ready for whatever gear production it may be called upon to handle.

Specification work in all materials and gear types.

DIEFENDORF GEAR CORPORATION
920 Belden Avenue
Syracuse 1, New York

DIEFENDORF

GEARS



Thinking of improving

"Improving" any machine really means increasing its productive capacity. That means tinkering with speeds and weights and strength—ending up with alloy steels.

Which alloy steel?—the one that meets physical requirements at the lowest cost. Molybdenum steels fill that bill. Good hardenability, plus freedom from temper brittleness, plus reasonable price enable them to do it.

Send for our comprehensive 400-page book, free; "MOLYBDENUM: STEELS, IRONS, ALLOYS."

CLIMAX FURNISHES AUTHORITATIVE ENGINEERING DATA ON MOLYBDENUM APPLICATIONS

Climax Molybdenum Company
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MOLY

NEW

AND RIGHT AT HAND

BOST-BRONZ ALL-PURPOSE BEARINGS

with Oil Film Always Present All Over

WHY THEY'RE JUST THE BEARINGS YOU'RE LOOKING FOR

Use BOST-BRONZ Bearings wherever shafts turn. They are porous to carry their own lubrication, interchangeable with solid bronze bearings but better. The oil reservoir in the bearing itself actually increases load carrying capacity. Shaft always rests on an oil cushion even when at rest. No oil holes or grooves. No oil drip or waste. Closer fitting to shaft. Precision sized. Quieter, smoother operation and longer life.

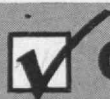
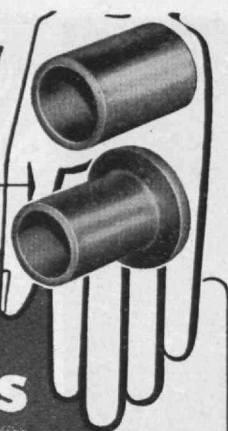
WHY THEY'RE RIGHT AT HAND

BOST-BRONZ Bearings are stocked in all standard sizes at your local Boston Gear distributor's — 85 complete stocks in North America. FOR QUICK INFORMATION on BOST-BRONZ Bearings and Bar Stock sizes, prices, tolerances, load ratings, etc., consult the new Boston Gear Catalog No. 55. Copy of this valuable reference book and the name and address of your nearest stock source is yours on request.

BOSTON *gear* stocks are *New*

BOSTON GEAR WORKS

72 HAYWARD ST., QUINCY 71, MASS.



CHECK WITH RAYTHEON for Special Purpose TUBES

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| <input type="checkbox"/> Aircraft Control | <input type="checkbox"/> Hearing Aid |
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| <input type="checkbox"/> Germanium Diodes and Triodes | <input type="checkbox"/> Ruggedized |
| <input type="checkbox"/> Guided Missile | <input type="checkbox"/> Special Purpose |
| <input type="checkbox"/> Subminiatures of all kinds | |

Raytheon has designed and produced millions of such tubes — has the specialized technical skill and resources to meet your needs. Over half a million Raytheon Subminiatures are carried in stock. Over 300 Raytheon Special Purpose Tube Distributors are ready to serve you. Application engineering service at Newton, Chicago and Los Angeles.

RAYTHEON

RAYTHEON MANUFACTURING COMPANY

Excellence in Electronics

Special Tube Section

55 Chapel St., Newton, Massachusetts

THE TABULAR VIEW

(Concluded from page 8)

ing. When not engaged in outdoor activities over the countryside or writing for The Review, Mr. Nordsiek spends his time as assistant to the director in the Research Service Department of Standard Brands, Inc. in his native New York.

With Contemplation for All. — The philosophical discussion "Contemplation; Its Status in our Society" (page 26) is the second article which The Review is happy to present from the typewriter of JULIAN A. JOFFE, '24. Holding to the thesis that Western civilization and particularly society in the United States has little to lose, for example, by substituting "a bit of cogitation" for such predigested diversion as household electronic instruments can bleat forth, Mr. Joffe masses an array of authority in support of his views. A graduate of the College of the City of New York and of M.I.T., Mr. Joffe has engaged in mechanical engineering and holds a professional engineer's license. He is partner in a business of his own in New York, active in civic affairs in Mount Vernon, and has found time for graduate work at the New School of Social Sciences.

To Broaden Our Education. — Three years ago, when M.I.T. was re-examining the role it would be called upon to play in the postwar era, the Institute's Faculty appointed a Committee on Educational Survey to review the state of education at M.I.T. Under the able chairmanship of Warren K. Lewis, '05, then Professor of Chemical Engineering and now Professor Emeritus, the committee was composed of Professors John R. Loofbourow, Ronald H. Robnett, C. Richard Soderberg, '20, and Julius A. Stratton, '23. This committee was assisted in its work by a Committee on Staff Environment and a Committee on General Education. The committee's report to the Faculty has now been made public. A summary of this report, is contained in the article "M.I.T. Educational Survey" which appears on page 30 of this issue.

Continental Can Co.
Francisco & Jacobus, Engineers



Our method of obtaining speed and economy in building construction is based on "know-how" and careful planning. It has been proved on over 800 contracts—tested under all sorts of conditions for the past 33 years.

If you are planning to build, let us show you examples of similar industrial buildings erected by us for America's leading industrial companies.

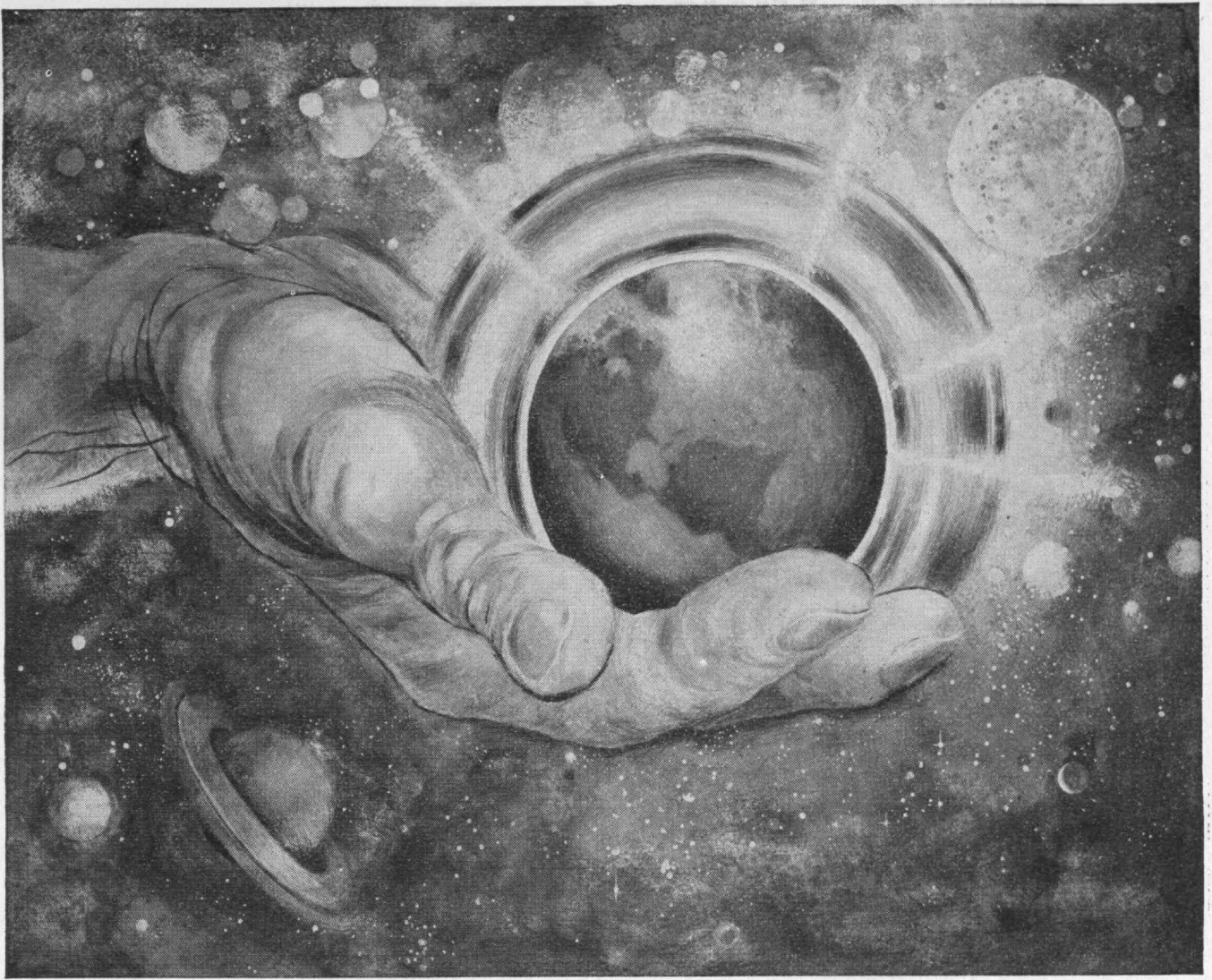
W. J. BARNEY CORPORATION

FOUNDED 1917

101 PARK AVENUE, NEW YORK

INDUSTRIAL CONSTRUCTION

Alfred T. Glassett, '20, Vice President



Bright New World

FROM MORNING TILL NIGHT, the colors of the rainbow are all around you—through plastics. A blue plastic clock wakes you, and you flip on an ivory plastic light switch. You take your clothes from a yellow plastic hanger. Plastic toothbrushes come in colors for every member of the family. Cheerful decorating schemes are enhanced by the beauty of plastic drapes. There's no limit to the colors you can get in these versatile materials!

But this is only the start of the plastic story. Plastics help make better clothing. Modern furniture and furnishings owe much to plastics. Much of your food is packaged in clean, clear plastics. Plastics add safety, durability, and appearance to many of your electrical appliances.

These versatile basic materials are man-made. Organic

chemicals are the ingredients of the "unfinished" plastics—called resins. From these resins come the many different forms of plastics we know.

The people of Union Carbide are leaders in the production of plastics, resins, and related chemicals. They also provide hundreds of other materials for the use of science and industry.

FREE: If you would like to know more about many of the things you use every day, send for the illustrated booklet "Products and Processes." It tells how science and industry use UCC's Alloys, Chemicals, Carbons, Gases, and Plastics. Write for free booklet C.



UNION CARBIDE
AND CARBON CORPORATION

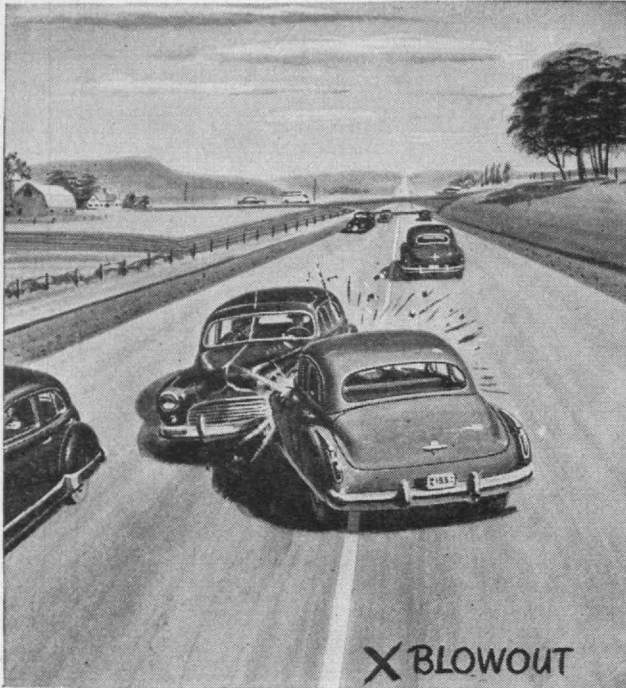
30 EAST 42ND STREET  NEW YORK 17, N. Y.

—Trade-marked Products of Divisions and Units include—

BAKELITE, KRENE, and VINYLITE Plastics • LINDE Oxygen • PREST-O-LITE Acetylene • PYROFAX Gas
NATIONAL Carbons • EVEREADY Flashlights and Batteries • ACHESON Electrodes • PRESTONE and TREK Anti-Freezes
ELECTROMET Alloys and Metals • HAYNES STELLITE Alloys • SYNTHETIC ORGANIC CHEMICALS

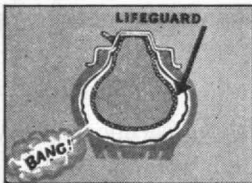
WHICH KIND OF PROTECTION DO YOU NEED MOST?

Against Blowouts Here? ↴

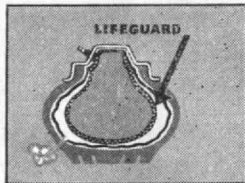


IF YOU DRIVE MOSTLY ON THE HIGHWAYS at usual highway speeds, you're always faced with the possibility of a blowout—that *sudden* loss of air that can mean *sudden* death for you and your family. You see, no tire or tube is blowout-proof. But there is a way to avoid blowout accidents. Equip your car with LifeGuard Safety Tubes by Goodyear. They make a blowout *harmless*!

How LifeGuard Safety Tubes can save your life!



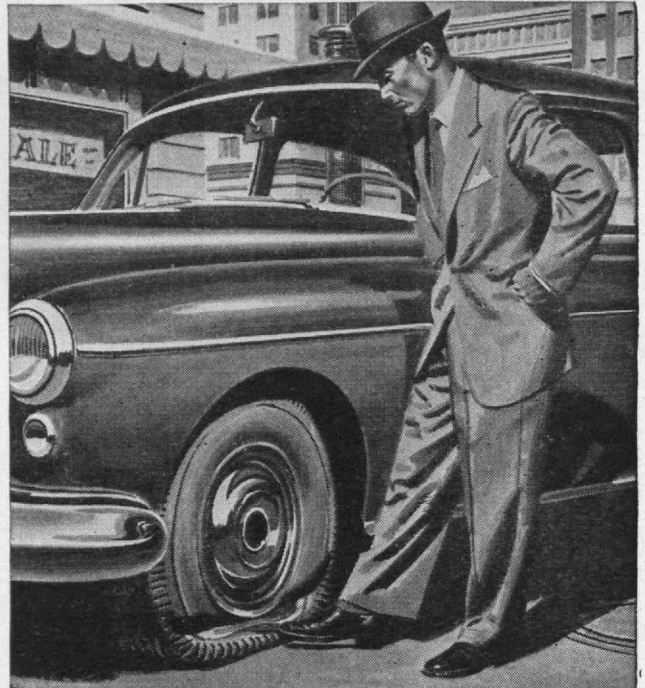
1. LifeGuards have *two* air chambers. In case of blowout, only outer chamber gives way.



2. Reserve air in cord fabric inner chamber supports car long enough for a safe, smooth stop.

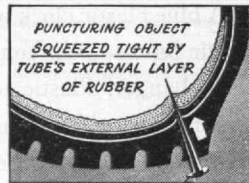
No tube or tire in the world will protect you against both punctures and blowouts. Goodyear, however, offers you the *best* protection against

Or Against Flats Here? ↴

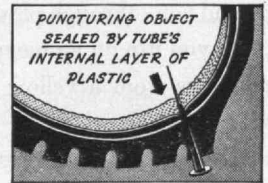


IF YOU DRIVE MOSTLY IN THE CITY, you're always faced with the possibility of a puncture, that *gradual* loss of air that causes a flat and all the trouble that goes with it. Goodyear has a special protection that rids city drivers of flats caused by punctures. Get Goodyear Puncture Seal Tubes. These double-action tubes seal punctures . . . *automatically*!

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Henry B. Kane, '24

THE TECHNOLOGY REVIEW

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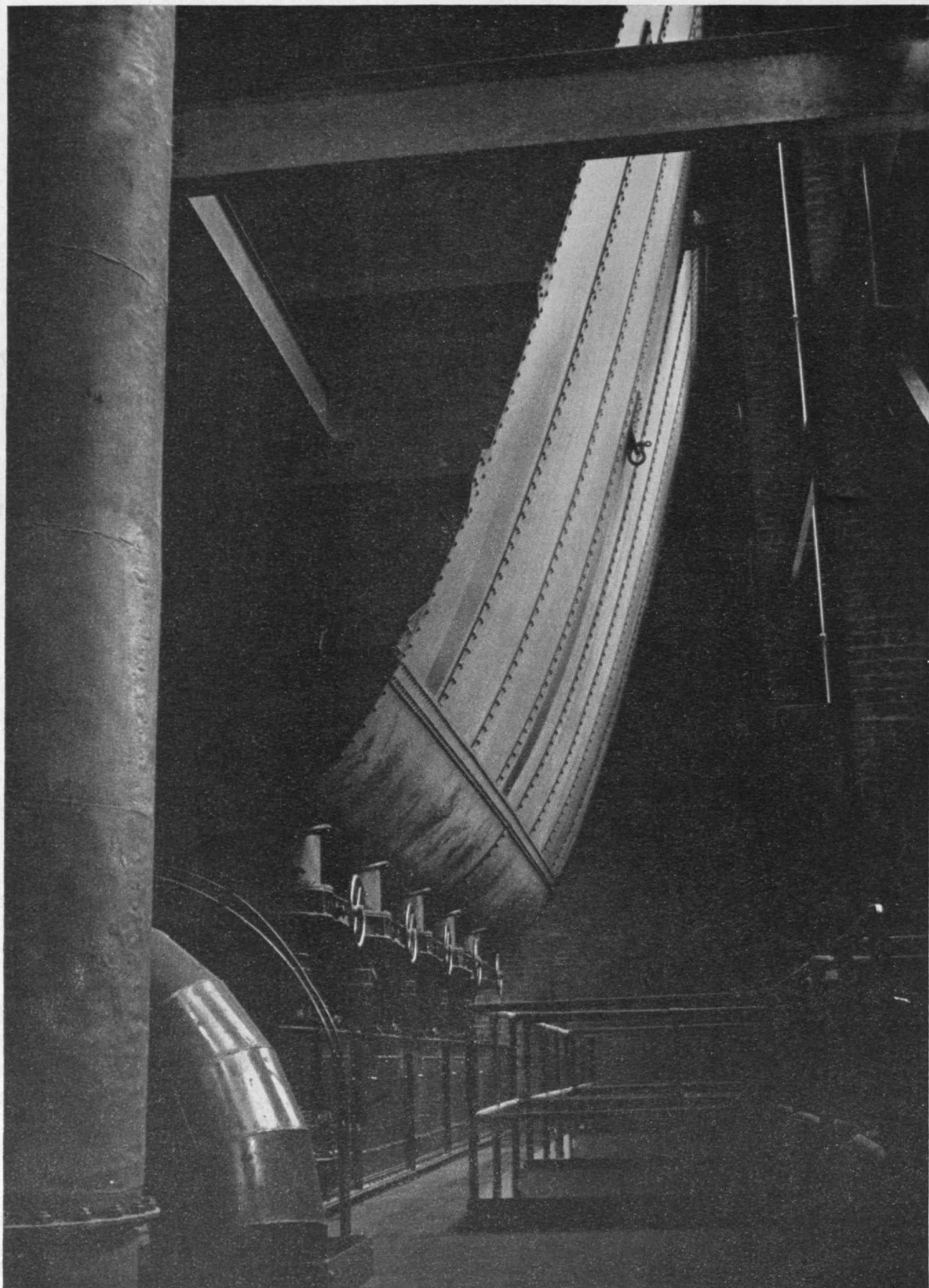
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Knox Hall Montgomery from Black Star

Transmutation — Black Coal to White Steam

THE TECHNOLOGY REVIEW

Vol. 53, No. 1



November, 1950

The Trend of Affairs

The Weak and the Strong

IN the days when preventive medicine depended more upon rationalism than upon experimentation, it was deemed a reasonable assumption that well-fed human beings or animals should resist disease better than ill-nourished ones. However, when controlled studies in this field were begun, the expected relationship was by no means always confirmed. In some of the experiments ill-nourished animals actually appeared to be less susceptible to disease than well-fed ones. In other studies the nutriture of the host had no demonstrable effect one way or the other on resistance to infection. All in all, the accumulated evidence on this subject has been inconclusive, sometimes even contradictory. A new element of understanding is now emerging, however, from the results of recent studies of the resistance of mice to mouse typhoid.

A unique feature of the mouse-typhoid studies is their consideration of natural variability in infective power or virulence of the disease-causing bacteria, as well as inherent variations in resistance of the mice. Such variability in any biological characteristic is found in all living things.* As these variations may be in a large measure hereditary, they can often be regulated by breeding procedures. Thus in the mouse-typhoid experiments, resistant and susceptible colonies of mice were bred, in addition to an average non-selected mouse population having widely variable resistance. Likewise uniformly virulent, and also uniformly avirulent, strains of mouse-typhoid bacteria were developed, for use experimentally alongside of the normal nonselected bacterial culture of variable virulence.

Each of the three types of animal was then infected with each of the three types of bacteria. Furthermore,

these nine groups were in turn each divided in two; half of the animals were fed what, at the risk of some oversimplification, may be called a "good" diet, whereas the other half of the animals received a "poor" diet.

The results of these experiments were concise and conclusive. All of the animals who had been exposed to the uniformly virulent bacteria succumbed, regardless of their inherent resistance and regardless of their diet. Contrariwise, all of the animals who had been inoculated with the avirulent bacteria survived, regardless of the natural resistance of these animals, or their ration.

Turning now to those animals who had received inoculation with the nonselected typhoid culture, all of the resistant mice survived and all of the susceptible ones succumbed, regardless of which ration they had eaten. But in the one remaining category, the non-selected animals exposed to the nonselected bacteria, the mice receiving the good diet survived, whereas those eating the poor diet perished. Thus here only did the quality of the ration have any effect upon resistance to disease.

This technique of considering the genetic background of bacteria or other infectious agents, as well as the hereditary of the host, provides an improved basis for studies of disease resistance. The findings summarized above furthermore have immediate practical import. The situation where a good diet was found to have a favorable effect, namely that of an animal population with variable resistance exposed to a bacterial strain of variable virulence, reflects the relationship existing when diseases attack mankind. Therefore, the inference follows that a dietary of maximal nutritive value continues to hold promise as a factor in protection against disease. For the present, at least, man is safe in assuming that a nutritious diet will provide health.

* Frederic W. Nordsieck, "The Mathematics of Life," *The Technology Review*, April, 1948, page 313.

Flywheel Engines

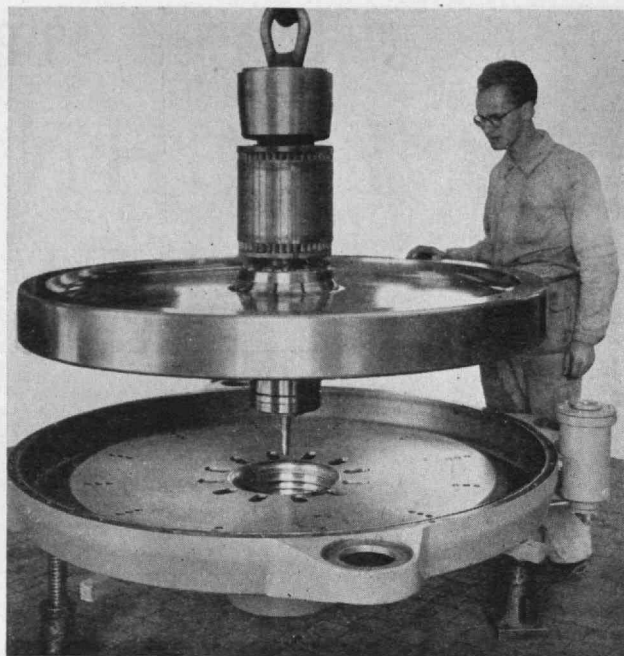
INHABITANTS of Zurich, Switzerland, may see a very unusual vehicle on test runs these days. Its peculiarity is so well hidden, however, that the average onlooker is unlikely to notice anything strange about it. On casual inspection, the vehicle looks like a very normal city bus, but its motive power is the energy stored in a large flywheel.

Of course the momentum of a flywheel has found numerous industrial applications, but usually it serves to bridge the gap either between power surges or periodic loads. Only once in the history of technology has a flywheel served for power storage in the same sense in which an electric battery is used for power storage. That was in the American Howell torpedo invented by John A. Howell, an officer in the United States Navy, and submitted to the Bureau of Ordnance on June 18, 1870. After a number of modifications the Howell torpedo assumed its final shape in 1890. It had an over-all length of 128 inches, a maximum diameter of 14.2 inches, and a total weight of 475 pounds. Its motive power consisted of a drop-forged steel flywheel, weighing 131.4 pounds, which was geared to two propellers, placed side by side, in such a manner that the propellers made eight revolutions for every 10 of the flywheel. An engine which formed a permanent attachment to the launching tube charged the torpedo with energy by bringing the flywheel up to 10,000 revolutions per minute. When the torpedo was fired, the flywheel released its stored energy to the propellers, and helped to keep the torpedo on course by way of its gyroscopic action. The reason why the Howell torpedo was never put into service was largely because it had a tendency to lose speed rather quickly.

While the Howell torpedo was purely mechanical, the new vehicles (among them the "gyrobus"), which have been developed by the engineers of the *Ateliers*

To all outward appearances the gyrobus, which travels the streets of Zurich, resembles any of the more conventional motor vehicles, as may be judged from this view of the bus undergoing servicing in its terminal garage.

Oerlikon



Oerlikon

Heart of the motive power for the gyrobus is the 2,200-pound flywheel, which is brought up to its normal speed of 3,000 revolutions per minute by an electric motor drive. The 6-foot flywheel runs on ball bearings in a sealed case, in a hydrogen atmosphere, to reduce friction losses to a minimum.

de Construction Oerlikon in Switzerland, are powered by what may be called a momentum-electric drive. The core of the system is a steel flywheel, weighing one metric ton (2,205 pounds). The diameter of the wheel is 180 centimeters or very nearly 6 feet. It runs in a sealed case on heavy-duty ball bearings in a hydrogen atmosphere and is accelerated to 3,000 revolutions per minute. The frictional losses are so small that, if left alone, the flywheel would run for a full 10 hours before coming to a standstill. Naturally the energy is not taken off this wheel mechanically. An electric motor, mounted on the same shaft, is used to accelerate the wheel. It also serves as a generator when the wheel is spinning, and in this case the current generated by the energy stored in the flywheel is then used to drive the bus. The flywheel and motor generator are mounted with axis vertical at the center of the bus, with the flywheel below the floor and the motor generator beneath a pair of back-to-back seats.

This design is not meant to replace existing heavy-traction vehicles of any kind: its purpose is to provide noiseless and exhaustless electric drive without the need for an overhead trolley. Its designers advocate its use for: city busses, city railroads making frequent stops, locomotives for shunting and general yard duty, and prime movers for use in mines.

A city bus of a total weight of 12 tons could travel about six miles on one full charge of the flywheel. Losses caused by starting and stopping for city traffic, stop lights, and so on would probably reduce this range to roughly four miles per charge. After that, the flywheel would have to be recharged which would require about two minutes. But city traffic occasions numerous stops to take on or let off passengers, and these stops can be utilized for recharging the flywheel

(Continued on page 50)

Universal Military Training

*The Practical Choice Facing the Country Is That between
a Policy of Preparedness and One of Improvidence*

By KARL T. COMPTON

[*The Technology Review is proud and happy to join the magazine Social Progress in presenting this lucid and thought-provoking analysis on a timely and important topic. Prepared at the invitation of the Secretary of the Division of Social Education and Action of the Board of Christian Education of the Presbyterian Church, Dr. Compton's message has unusual significance for Technology Alumni. — Ed.*]

IN science, the objective is to assemble and analyze evidence which is so convincing that the conclusions must be accepted by all informed people. There is no room for personal opinion, once the facts are adequately assembled. Thus the so-called "laws of science" are as basic as the facts of nature. There is, of course, the realm of uncertainty and hypothesis through which all scientific inquiry passes in the process of establishing a basic principle or law of nature. This area of uncertainty is the field for scientific research. Mathematics and some of the simpler parts of physics and chemistry are examples of great progress in reaching conclusions which are no longer debatable. More complicated aspects of these subjects, and of such fields as biology and psychology, are examples of scientific endeavor in which there is still room for differences of opinion and judgment regarding the evaluation of the evidence, and for the search for further evidence which may settle the controversial points. But the characteristic feature of scientific work is its disassociation from personal opinion or emotion, and its endeavor to base conclusions on factual evidence so objectively that there is no room for final difference of opinion.

The realm of human affairs, on the other hand, is so vastly more complicated that in only the simplest affairs of life can this purely objective conclusion be reached and be universally accepted, even though the effort be sincerely and intelligently made to achieve it. This is especially true where ethical or religious values are involved, and where human emotions come into play. Reaction to the proposal of universal military training is in this category. With the same set of facts in mind, it is evident that widely different conclusions are reached by different people. No less a person than Woodrow Wilson said:

We speak of this age as the age when mind is monarch, but I take it for granted that if that is true, mind is one of those monarchs who reigns but does not govern. As a matter of fact, the world is governed in every generation by a great House of Commons made up of the passions; and we can only be careful to see that the handsome passions are in the majority.*

* Howard Lowry, *The Mind's Adventure*, page 34 (Philadelphia: Westminster Press, 1950), \$2.50.

Nevertheless, the intelligent person will make the best effort he can to evaluate rationally, rather than emotionally, the circumstances which bear on the decisions he must make and the actions he must take.

With these factors in mind I have no illusion that my presentation here will convince everyone that my views are correct. I can only hope to explain some of the reasons for my stand on the subject and hope that this analysis may be helpful to some others.

First, let me state certain facts which seem to me to be almost self-evident, and which bear upon our conclusions regarding universal military training. One such fact is that we often have to face alternatives, none of which is pleasant or right, but where some choice must be made even if one choice be to do nothing and take the consequences. One difficulty here is that even the Christian religion does not always point the clear way; for example, "Thou shalt not kill." But what of a situation where a policeman sees a desperado at the point of murdering a mother and her children, and has no time to intervene except by shooting the desperado? The same problem is posed in more complicated circumstances when an aggressor nation attacks a neighbor nation for purposes of domination.

Another fact is that universal military training is not a basic issue, but becomes an issue only after several more fundamental issues are faced. One such issue is the question: "Is there anything worth fighting for?" or "Is war ever justified?" The answer to these questions is a matter of moral judgment. For my own part, I would fight to prevent the raping of a loved one — and I hope that my Christian principles would make me react similarly even if the person attacked were not of my circle of family and friends. The majority of people of our race have struggled for generations, through violence and war as well as through other means, to achieve certain rights of individual freedom and popular government. Most of us would not lightly surrender these rights and permit the undoing of generations of human progress. In brief, we would put freedom ahead of peace as a basic objective. If the issue is not immediately before us, but is before some other nation like South Korea at the present time, then we face a decision which is twofold: first, the practical question, "Is the ultimate threat to us sufficiently serious to justify our intervention through self-interest?" and second, the moral question, "Do we have a duty to come to the defense of another nation which is unjustly and cruelly attacked?"

If one's answer to these questions is the sincere conviction that any alternative whatever is preferable to war, then for that person the argument might seem to be closed, but it is not. Whatever this individual, and

a group like him, may feel about the questions posed above, there is still the unhappy reality that war may come anyhow. There is partial truth in the saying: "It takes two to make a fight." A more accurate statement, and one more pertinent to the situation would be: "It takes two to make a peace." Thus the possibility must be faced that the individual who believes that war is the worst of all evils, may still have to become engaged in it, along with all his fellow citizens.

The answer made by the majority of our people to the question of whether war is ever justified is not made in the abstract, but is made as specific situations and types of situations arise. I believe the past and present evidence to be overwhelming that the American people will fight, if necessary, under circumstances of extreme threat or attack upon their own freedom and safety, or upon the moral standards which they hold most precious. Thus the actual problem is not what we would wish were the case, but what should we do under the circumstances. Here there are several alternatives also, before we reach the question of universal military training.

First, there is a group with sincere religious convictions against war or any participation in its preparation or conduct. These religious convictions are respected, even in time of war, by allowing such persons to substitute some form of national service which is as far as possible removed from military activity. A second alternative is to do nothing, or as little as possible, toward being ready for a war emergency. The third alternative is to prepare to meet any war emergency promptly and effectively, even though every effort is simultaneously made to avoid war.

The first alternative, while justifying a certain measure of respect, cannot be considered as having much effect on national policy, although it may have domi-

H. Armstrong Roberts



nating effect on those individuals who subscribe sincerely to it. The practical choice facing the country is, therefore, that between a policy of unpreparedness or a policy of preparedness. Here there are some factors which can be stated with certainty; other factors can only be weighed pro and con. In the final analysis, it is the over-all judgment of the people and their elected leaders which will set the program. Let me mention a few of these factors.

It is certainly a fact that enormous sacrifice of life and property occur, and danger that defeat may render even these sacrifices futile, when a nation is caught in war unprepared. It is certainly true that modern methods of warfare combine to make unpreparedness more dangerous — this because the attack will be more sudden and devastating and because the highly technical nature of modern warfare requires a long time for production of its instrumentalities and lengthy training in their use. The slogan that a million men will spring to the defense may have had some meaning many years ago; it has no significance now except as an emotional trick of oratory. Over against the moral issue of war itself is the moral responsibility of permitting unnecessary slaughter and possible loss of those values which we cherish as the "American way of life," if we permit ourselves to be caught in war unprepared.

Among the more uncertain factors is the extent to which preparedness for defense increases or decreases the probability of becoming involved in war. The records of the last two world wars are conclusive that, whatever else may have been contributing factors, the final decisive factor was the belief of Germany that its aggressive ambitions could be carried through successfully because of conviction that the democratic nations and the intended victims were physically and spiritually incapable of putting up a successful resistance.

Another uncertain factor, especially important at present, is the extent to which the nations opposed to the continued expansion of Soviet domination might defeat themselves economically through their programs of military preparedness. As to the threat of Soviet domination there is no uncertainty: it is evident from a great mass of circumstantial evidence as well as from the clearly expressed statements of purpose from Karl Marx to Stalin — just as clearly as was Hitler's objective stated in *Mein Kampf*. It is in the uncertain areas that intelligence and judgment are needed to find the most advantageous evaluation and course of action. I believe it is clear that the predominant judgment of the American people is in favor of adequate preparations for defense in the present world situation.

It was in the light of all these considerations that the civilian commission, appointed by the President in November, 1946, to advise him in the matter of universal training, addressed itself first to such basic questions as those discussed above. Its judgment was that, except as a measure for national security, universal training was not advisable. It then went on to examine into the need for strengthening of our national security, and concluded that the need existed, and was urgent. In attempting to determine the direc-

tions in which our national security should be strengthened, it made an analysis of the various ways in which our nation might become involved in war, what the nature of war might be in each situation, and what would be the requirements for maximum success and minimum loss. Incidentally, one of the situations which was analyzed was exactly that which has developed in Korea, although that country was not mentioned specifically.

This commission was composed of two churchmen, two practicing lawyers, two educators, a former diplomat, an industrialist, and an industrial relations counselor. It unanimously recommended universal training in peacetime, as one essential part of an integrated national security program including a number of complementary factors, no one of which was in itself adequate but which taken together formed the basis of an adequate program. It recommended that the universal training program be established with careful attention to moral and religious environment and character development, and that it be continued until some later re-evaluation of the world and national situation should indicate that it is no longer needed.

I shall not attempt here to recapitulate the details of the plan. They have been widely discussed and are available for study and reference. In closing, however, I should like to make the following comments.

If the plan had been put promptly into operation, we and the United Nations would now be in a far less critical situation. We could have reacted far more promptly and effectively against the aggression in Korea. It may be argued, though not proved, that the Korean aggression would never have occurred — and this goes also for other directions of possible future aggression whose possibility we can envisage. For it seems clear that no nation will undertake a military aggression if it believes that the forces which will oppose it are strong enough to render the attempt unsuccessful and disastrous. Here I believe that those who have opposed universal military training, however sincere may have been their reasons, have much to answer for.

Secondly, I can understand sincere differences of opinion on this subject, but I have neither sympathy nor respect for the tactics which were employed by some to defeat the proposal by using the epithets "conscription" or "undemocratic." These are rabble-rousing tactics aimed at arousing emotions, rather than honest attempts to face and evaluate the issues. The same tactics and epithets were used in the middle of the last century in the attempt to defeat the project for universal education. Furthermore, we do, by democratic processes, conscript wealth by taxes. We conscript soldiers in time of war. We conscript citizens locally to fight fires or floods or other dangers of disaster. When our society, for its own protection and welfare, demands services of its citizens, and does this through procedures established by the people themselves, such procedures are not "undemocratic"; they are examples of democracy at work.

Finally, there is the question as to whether universal military training should be authorized now by law, or whether decision on this question should be



H. Armstrong Roberts

postponed until we are again at peace. I am no longer in close contact with the Department of Defense, but I suspect that we may not have the facilities of physical equipment and training personnel available for operating a universal military training program now, while our resources are occupied in meeting the emergency in Korea. Nevertheless, the argument seems to me to be overwhelmingly in favor of authorizing such a program with the least possible delay, with provision that it be put into effect when conditions make this possible. The reasons for so proceeding are several, of which I would mention only the following.

The end of the Korean war, when it comes, will almost certainly not be the end of further danger of war. Those nations, from which danger of war stems, have seen us fold up our military strength precipitately as soon as we have finished a war. World Wars I and II are vivid examples. This action testifies nicely to our lack of aggressive intent, and not so nicely to our stamina to see through to conclusion the objectives for which we have fought, once the immediate danger was past.

We do not need this kind of proof that we have no aggressive intentions or imperialistic ambitions. Our treatment of China after the Boxer rebellion, our freeing of Cuba and the Philippines after helping them to establish a program of self-government, are evidence on this point far more convincing than words or propaganda claims. But we do desperately need to establish an adequate basis for security, and to convince our friends and our possible enemies that we are determined to support effectively our own security and the international effort of the United Nations to prevent war by friendly co-operation if possible and to discourage war by force if necessary.

Today's Students Called "MEN WITH

ONCE again an entering class reaches the Institute under the shadow of a national emergency, and therefore under uncertainty as to how long it can continue at college. I urge that you consider your status as a student here as an important service to our country. America has a shortage of competent, well-trained men in many professional fields, including science and engineering, and this shortage is likely to grow more acute if the emergency itself becomes more acute. It is important, therefore, that we continue to educate as many professional workers of high grade as we possibly can, and that we recognize that the student, who is preparing himself industriously to be an effective citizen and worker, is performing a patriotic service no less than the man who is called to participate directly in military service.

Since most of you are studying in the fields of science and engineering, you have a quite special status because of the critical importance of these fields to our national security. This makes it all the more important that you realize the importance of the work which you will be undertaking here as well as the importance of your future functions as scientists, engineers, architects, economists, and managers. This means, further, that you have a special obligation to make as effective use of your time and opportunities here as your capacities permit.

I also caution against the attitude that only work in the fields of science and engineering will be important under present conditions. On the contrary, I think that the acquirement of the broadest possible education is your special obligation and mission at the present time. In the modern world of turmoil and strife in which we live, it is absolutely essential that our educated people, particularly our professional people, acquire the broadest possible understanding of modern society, of how it works, and how it fails to work. The future of our country depends upon our success in solving human problems along with material problems. There is no proper place in our colleges any more for those who are indifferent to problems of human conduct. The future of our country also depends upon our interest and competence in preserving such imponderables as good taste, high standards, ideals, and spiritual interests.

Scientists and engineers, because the effects of their material accomplishments are so great, are under a special obligation to think broadly and humanely about their work and its impact. And so I suggest to

The Institute's dual responsibility in carrying on a vigorous educational program, while simultaneously increasing its contributions to national security under present unsettled world conditions, is emphasized in President Killian's welcome to the Freshman Class.

you that as new students at Technology, you are men with a mission — a mission to prepare yourselves with all the energy you can summon to serve your country both in war and peace. I recall to you the classic definition of an educated man, Milton's oft-repeated definition: "I call therefore a complete and generous education that which fits a man to perform justly, skillfully, and magnanimously all the offices both private and public of peace and war." In a time of crisis, especially, this kind of education should be your ideal.

Perhaps it would be helpful to you if I described our present policy here at Technology as we have formulated it in response to the present crisis. The international situation is fraught with danger for us, and the days ahead are ominous and obscure. We need therefore to keep ourselves in readiness for anything. We cannot expect a normal, peaceful condition in the months ahead.

This means that we are faced by the difficult but imperative problem of finding out how to exist under these conditions without giving up all social or intellectual progress. There have been other periods in history when peoples and nations have been involved in a condition of war or semiwar over a long period, and at the same time have been able to be enormously productive. Some of the great advances in science and in art have occurred during periods of emergency and stress. To cite one example, Leonardo da Vinci, Michelangelo, Titian, and Raphael were making their contributions to the Renaissance in Italy in the same years that a fellow countryman, named Machiavelli, was writing of Italy as a country "without head, without order, beaten, despoiled, torn, overrun and to have endured every kind of desolation." Leonardo did his work during the turmoil which accompanied the transition from feudalism to nationalism. We must do our work in a world that is suffering the birth pains of internationalism.

With these conditions and necessities in mind, we here at M.I.T. believe it important that, under present conditions, we should maintain our regular educational program in as normally vigorous condition as possible and we should proceed with all of our plans to develop and strengthen our program without letup.

It is critically important that we not disrupt our educational program prematurely or unnecessarily. We deem it to be of special urgency that we maintain our undergraduate program, the program that you are now starting, in the most effective possible manner. To do this means that we must have the closest possible collaboration from the students and staff, and we may be working under difficulties of man-power shortages and other pressures. It means further that it is important that all of us remain calm and that we hold fast to a sense of dedication to our work and its heightened importance.

As you may know, one of the distinguishing characteristics of M.I.T. has been the spirit of public service which animates all of its staff. During World War

A MISSION" — by James R. Killian, Jr.

II, M.I.T. carried out the greatest research program undertaken by any American educational institution, and I can tell you at the present time that we are carrying the heaviest load of research and advisory activities, directed at national security, of any American institution at the present time. This means, therefore, that we have a dual responsibility in maintaining and possibly increasing this contribution to the national security, while at the same time carrying on a vigorous educational program that will result in the best possible preparation for our students.

In seeking to carry out this dual responsibility, we are attaching high priority to our educational and basic research programs in the belief that under present conditions their uninterrupted maintenance is our best contribution to the national welfare. We wish to maintain our staff and student body as a team — a force in being available and strong to meet future demands as they arise.

I hope that as you settle down and become familiar with your environment here, you will come to sense the key importance of this institution in our national life, both in peace and war. The sum total of our students, staff, and facilities here constitute one of the great resources of the nation, and the contributions which we have made and continue to make can affect profoundly the welfare of the nation. This is true because of our great resources of outstanding scholars, together with the spirit of public service about which I have already spoken. One of the great traditions and traits of M.I.T. men is a readiness to serve the public interest unselfishly and in the professional spirit.

Our colleges and their students are vital factors in keeping democracy strong and in keeping it a community of individuals and not a regimented mass of people. That is why I feel strongly that in our community life at Technology we must practice democracy and employ in all of our relationships a humane and tolerant spirit of mediation, reconciliation, and reverence for the individual.

All of what I have said so far has been leading up to this problem of how to tackle college in the year 1950 and of the attitudes which will be most helpful to you as a student at M.I.T. My hope for you is that your years in college, taken in the round, may be not just a task, but an exhilarating and joyous experience. I am sure that they can be if you avoid cynicism and indifference and purely selfish objectives. If you are receptive and open-minded, active and not passive, it can be a matchless experience.

Why is this true? As an undergraduate, you are living in the nearest approximation to a Utopian community that you will ever find. A college, if it is good and yours is, is so contrived that every part of it seeks to encourage, through you, your growth and well-being. Colleges, I hasten to say, are not perfect communities: wherever people are gathered together there will be some pettiness, selfishness, and frustration. These are minimized, however, in a college com-

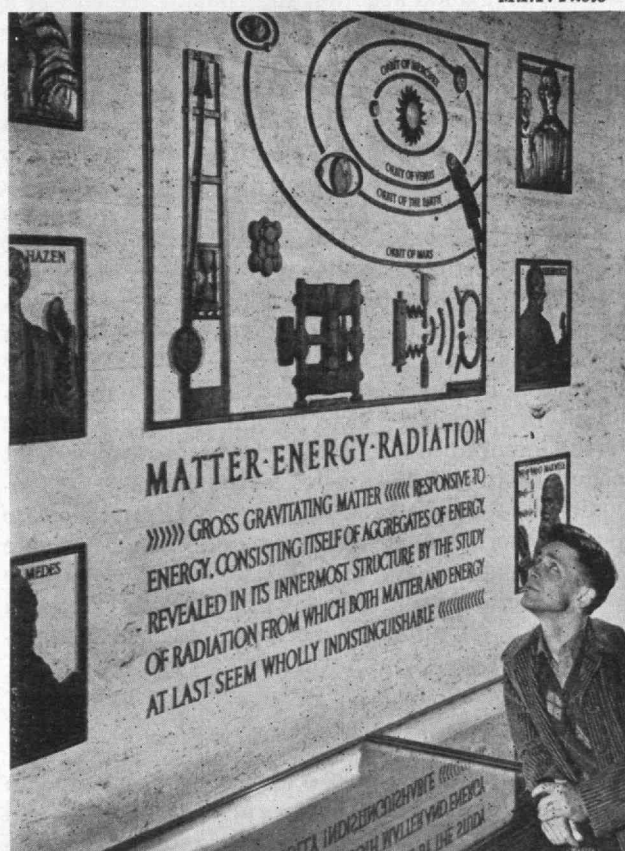
munity, and I think that you will find more good will in college than in any other human situation outside of a happy home. Since the setting and conditions approximate the ideal for living and learning, it is important to take advantage of them to the hilt, to share fully in every part of college living that can contribute to your development. By living generously, even boldly, under these conditions you can have the magical experience of which I speak, the exhilaration of free flight.

The fact that college is an oasis designed for your benefit places you under special responsibilities. You must realize that being in this oasis is a privilege and not a right. You must remember that the earnings and labor, the striving and the imagination of many people have made it possible for you to benefit from the institution. The obligation that this places upon you is that you must accept your responsibility for keeping it an oasis. We believe that a man demeans his college education if he looks upon it solely as a means to increasing his earning power.

Essentially a college is a group of people with a common aim, a "company of scholars," and the effectiveness of this community depends upon the quality of the people in it and their willingness unselfishly to work for the common good. I have confidence that you will do this, but I still want to stress the importance of living altruistically in college. This is the only fitting way to live in a community that must be altruistic if

(Continued on page 64)

M.I.T. Photo



All Experience Is of Change — I

A Survey of the Senses Reveals Large Gaps in Our Knowledge of the Mechanism by Which Man, Depending Mainly on Vision and Hearing, Perceives His Environment

By FREDERIC W. NORDSIEK

THE human senses are in some respects keener than the most delicate scientific instruments, but in other respects are grossly inaccurate. Nevertheless the early observations of natural phenomena, from which the beginnings of the sciences stemmed, had to be accomplished by the unaided senses. Today, admittedly, man enlists the aid of a great variety of precision instruments in his scientific observations. But technical knowledge — whether gained through the senses, through instruments, or developed by means of mathematics or other forms of ratiocination — is useful only to the extent that it is transmitted from individual to individual and from generation to generation. For such transmittal, use is made of written or spoken language, and the specialized notations of the various sciences. But in this form, knowledge can be absorbed by the recipient only through his senses, usually sight or hearing.

In fact, the ability thus to transmit ideas via the senses is a cardinal point of differentiation between man and the lower animals. In this connection, it is noteworthy that as man climbed the evolutionary ladder, he gained accuracy in vision at the cost of a less highly developed sense of smell. Thus the lower mammals rely primarily upon smell to communicate with their environment, to guard against danger, to guide them to food, and to find a mate; whereas man is mainly dependent upon sight for these purposes. We shall see presently, however, that in some instances at least, animals receive sensory impressions similar to those received by the human being, but that man's intellectual ascendancy arises from his ability to interpret, evaluate, and interrelate these impressions, as well as to convey his conclusions therefrom to other human beings.

Thus it becomes apparent that despite the availability of specialized instrumentation, and regardless of the importance of mathematics in the development of modern scientific knowledge, the human senses remain a vital link in technical progress. Let us therefore ponder the human senses; enumerate them; evaluate their strengths and weaknesses; and determine whether limited acuity in any of the senses can be an obstacle to scientific advancement, either of the individual or of society as a whole.

There Are More than Five

Classically, the human senses were considered to be five in number — sight, hearing, touch, taste, and smell. In the light of present-day knowledge, how-

ever, sight and hearing alone stand as well-defined units. Sight and hearing are, incidentally, by far the best understood of the senses, and have been explored by physicists as well as by physiologists. Touch, taste, and smell are not unities, but rather are complexes consisting of several senses. Finally, a number of other human senses exist that were entirely omitted from the list of the classic five.¹

What the layman knows as touch is actually a group of "cutaneous" senses, so-called because their receptors lie in the skin and mucous membranes. These tissues can register four quite distinct sensations: pressure, pain, heat, and cold. The receptors for each of these several sensations differ in structure, and may be distinguished readily under the microscope. Furthermore, the four types of cutaneous receptors also differ in their distribution throughout the body; thus a given area may be sensitive to pressure but not to pain, and so on.

A true sense of taste does exist, but has only the limited ability to identify four sensations: sweet, sour, salt, and bitter. What the average person means when he refers to taste is, in fact, flavor. Flavor is a complex sensation that may include taste, as well as odors detected in the nasal passages, and also cutaneous sensations in the mouth generated by texture and other physical properties of the ingested substance. Thus, vanilla is "tasteless" when the nose is held shut, because the flavor of vanilla is an odor. Likewise, a soggy cracker "tastes" different from a crisp one, because cutaneous sensations are an important part of this flavor.

The olfactory sense has two elements: One member is the true sense of smell that differentiates sharply among odors of various sorts; the other element, called the "common chemical sense," is the faculty that, for example, reacts to ammonia or chlorine fumes. If one recalls an encounter with such fumes, he will realize that the sensation is one of irritation rather than of true odor. Odor and the common chemical sense are, in fact, experienced through two anatomically different types of receptors in the nasal passages.

Already our original five senses have doubled in number. And additions to the list may now be adduced through consideration of the fact that, by definition, senses are responsive not only to external stimuli but also to internal stimuli. One important sense in the latter category is proprioception, or muscle and joint sense. This faculty keeps the individual apprised of the position of his members, quite inde-

¹ Please see references at end of article.

pendent of sight. Proprioception, for instance, makes it possible for one to touch accurately a given point on the body surface, with the eyes closed.

Another related and well-defined sense is balance and rotation, sometimes called **static and dynamic equilibrium**. This sense makes possible the maintenance of an erect position, or any other desired position, without visual reference to the environment, and also keeps one informed at all times of the position of the body.

Finally, there are several miscellaneous faculties that are sensitive to stimuli not yet covered in our discussion. Although not all thoroughly understood, these faculties are regarded by physiologists as true senses. They include hunger, thirst, visceral senses (such as nausea), tickling, and the sex senses.

Thus a cursory scrutiny has revealed that there are fully three times as many human senses as would be indicated by the classic total of five.

All Experience Is of Change

With some exceptions, sensory impressions result from changes in stimulation; either changes in nature of the stimulus, or increases or decreases in intensity of the stimulus. Hence it may be said on the whole that "all experience is of change." But the several senses differ considerably in their ability to detect changes in stimulation. Furthermore the increment, or decrement, in stimulation that is noticeable depends strongly upon the intensity of the basic stimulus. This fact is illustrated by the commonly made observation that a single candle seems bright in a dimly lighted room, whereas in a brilliantly illuminated area the light of a candle is scarcely perceptible.

The relationships just described were reduced to an equation by Weber, a Nineteenth-Century physiologist. This equation, known as Weber's law, is

$$\Delta S/S = K.$$

When expressed in words, Weber's law states that the magnitude of the least perceptible change in stimulation, ΔS , divided by the magnitude of the basic stimulus S , is equal to a constant. The value of the constant K differs for the several senses. Mathematical equations were rare in the biology of the previous century, and the crude and approximate nature of Weber's equation is revealed by the fact that for a given sense

Man's knowledge of his environment comes primarily through the six well-defined senses shown in the white sectors. For each sense the concentric arcs represent the progressive steps in converting a physical stimulus into a subjective sensation.

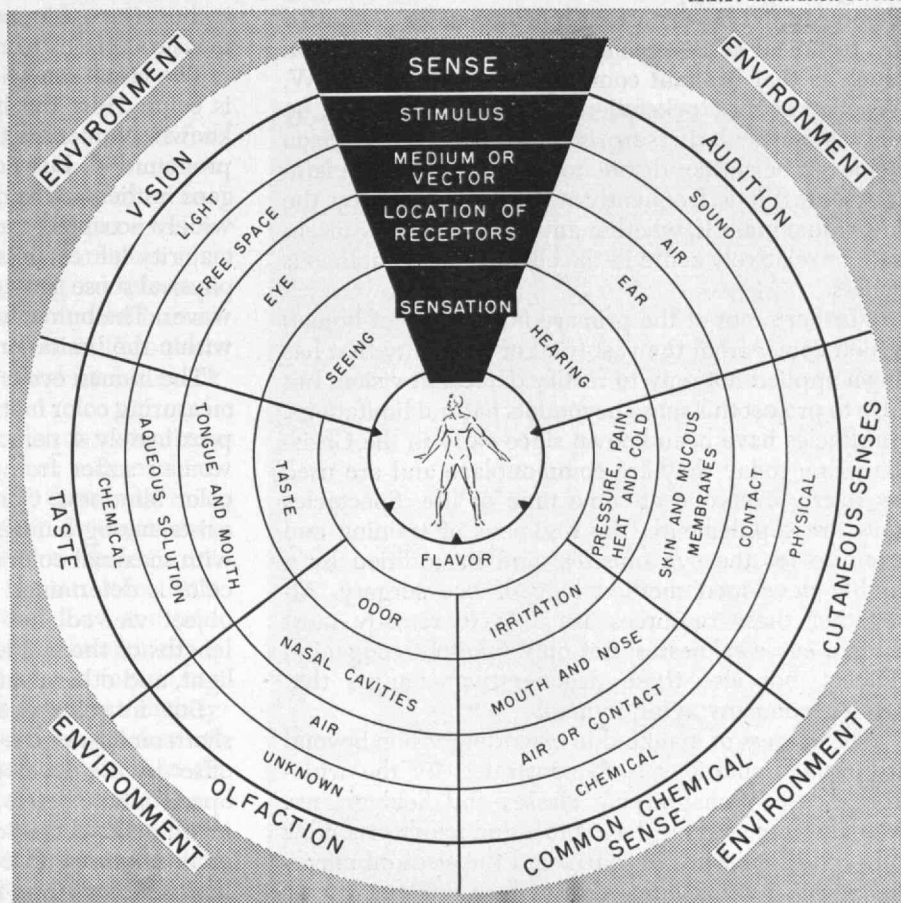
different values for K are stated for light, medium, and heavy stimulation. Weber's law was, to be sure, refined by a subsequent worker in the field named Fechner; but Weber's original and primitive equation serves to demonstrate the points we wish to make here.

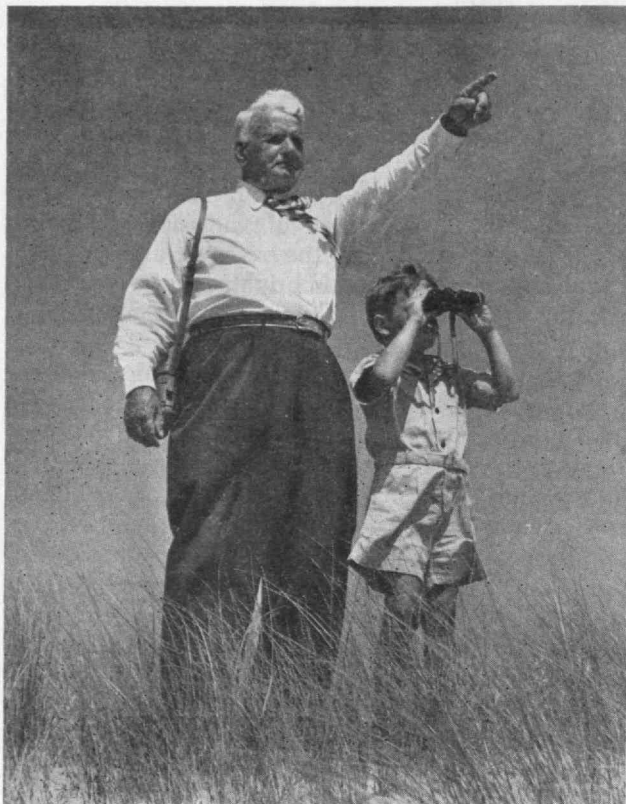
First, Weber's law shows that human senses are of limited value in quantitative evaluation of stimuli. This fact is illustrated by the example, already cited, of the apparent variation in brightness of a candle according to the degree of illumination of the surroundings where the candle is seen.

Secondly, Weber's equation provides a useful, if approximate, means of comparing the quantitative acuity of the various senses. Thus as applied to vision, the constant K of Weber's law is in the order of 0.01. This signifies that for vision, most acute of the human senses, a one in one hundred change in stimulus is perceptible. Approximate values of K for other senses are 0.05 for the cutaneous sense of pressure, 0.1 for hearing, and 0.3 for taste and odor.² Hence, for the latter, a stimulus must vary at least 30 per cent to give a sensory impression of change.

Thus, the human senses cover a broad range in quantitative sensitivity from the relative acuteness of vision to the relative bluntness of taste and odor. However, the senses that are quantitatively insensitive may be qualitatively acute. For example, the normal human nose can detect, as we shall see presently, the presence of odorous substances in the air in concentrations vastly smaller than can be revealed by the most sensitive chemical or physical methods available, with the possible exception of spectrometry.

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Harold M. Lambert

Seeing Is Believing

Man and the anthropoid apes have the gift of binocular stereoscopic vision. As has already been indicated, the human being relies more heavily upon vision than upon any other sense.³ The widespread recognition of this pre-eminence of the visual sense is demonstrated by the astonishment usually generated by technical achievements made by a blind person (such as that brilliant contemporary example, D. W. Woolley of the Rockefeller Institute). In contrast, no one is particularly surprised when a deaf person achieves scientific distinction. As for the remaining senses, it is frequently not known, even by the individual himself, whether anyone is relatively insensate or relatively acute in the chemical and cutaneous senses.

Further proof of the primary importance of human vision comes from the vast fund of ingenuity that has been applied not only to rectify defects in vision, but also to project this sense beyond its natural limitations. Spectacles have been known since early in the Christian Era; today they are commonplace and are used by nearly everyone at some time of life. Spectacles now are supplemented by regimens of training and exercise for the eye muscles, and in addition by a highly developed methodology of eye surgery. Altogether these resources are able to remedy most human eye weaknesses; not only inherent congenital defects, but also those degenerative changes that often accompany aging in man.

The success of mankind in extending vision beyond its initial limitations is demonstrated by the widespread use of magnifying glasses and field glasses. Mammoth telescopes⁴ have projected man's vision far out into the reaches of space, and the electron microscope⁵ has carried human sight deep into the micro-

cosm, to the extent that the larger molecules may now be directly observed.

Although vision is quantitatively the keenest of the human senses, vision (or its psychological manifestation) is prey to a multitude of deceptions. This fact is demonstrated by the common use of the phrase "optical illusion"; did you ever hear general reference made to an auditory, olfactory, or tactual illusion? A salient optical deception, that fortunately has been turned to excellent advantage, is persistence of vision. Persistence is the lingering of a sensation for a brief interval after the stimulus has been discontinued. It occurs in some degree with all of the senses, but so far as quantitative knowledge is available appears to be most marked with vision. As is well known, persistence of vision is the basis of motion pictures and also television, for both of these devices present a rapid succession of images that the eye, because of its ponderousness of response, blends into one continuous and apparently moving whole.

The human eye has a limited faculty of absolute localization, as demonstrated by ability to localize approximately a point of light in a dark room. This is accomplished by means of sensations resulting from focusing and rotating movements of the eyeballs, and from diverging or converging motions of the two separate eyes. However, locality, along with size and motion, is normally judged by unconscious comparison with other objects seen in the visual field. Many of the well-known optical illusions depend upon this fact. Nevertheless, man's crude subjective judgments of locality, size, and motion are adequate for the conduct of his everyday affairs. Where precision in such measurements is necessary, man has perfected transits, tachometers, micrometers, and a wide array of other mensuration instruments for this purpose.

The visual sensation now remaining to be discussed is color. How the human eye registers colors is not known. Numerous theories of color vision have been propounded, but none succeeds in filling all of the gaps in the pattern of known facts. A few of the more widely accepted theories however do rationalize the majority of established phenomena.⁶ Color in the physical sense is determined by the frequency of light waves. The human eye is sensitive to light waves only within the limitations of a single octave.⁷

The human eye is an extremely poor instrument for measuring color in its physical sense. At the outset, approximately 4 per cent of men and a tenth as many women suffer from hereditary congenital red-green color blindness. Congenital total color blindness also exists among human beings. But even for individuals with maximal color vision the subjective sensation of color is determined not only by inherent color of the object viewed, but also by surface textures, wavelengths of the incident light, intensity of the incident light, and other confusing factors, such as induction.⁸

But in color evaluation, as in mensuration, the shortcomings of the human eye have been effectively offset by the development of specialized instruments. Spectrophotometers, filter photometers, and similar instruments serve to characterize colors, either pure or in mixtures, to complete satisfaction. As a result, limited color vision is probably less of a handicap to a

scientist than to certain artisans. A few elementary technical tasks, such as chemical titrations to color end points, admittedly are difficult for one with imperfect color vision; but a scientific career could easily be planned to avoid such activities. Contrariwise in some of the crafts, as for example painting and decorating or printing, defective color vision might well be a great handicap.

Up to this point our discussion has dwelt upon shortcomings of human vision. Where then lies the strength of what we have heralded as the cardinal human sense? This strength lies primarily in visual resolving power. Thus the human eye has an extraordinary ability to segregate closely adjacent objects. Two stars in the firmament are visualized as separate if they subtend, at the lens of the eye, an arc of only 50 seconds. Projected through the lens to the retina, this angle marks off a distance of a mere 3.2 microns. Other applications extend the human visual resolving ability to even finer differences; thus, in the reading of vernier scales, a break in the boundaries between lines may be detected if it subtends a mere 10 seconds of arc, corresponding to 0.73 microns on the retina.

The illustration just cited of the reading of vernier scales highlights why the resolving power of the human eye compensates for difficulties in subjectively quantifying size, locality, motion or color. Because of its ability of resolution the human eye can read the scales of micrometers, the rider beams of analytical balances, the extremely fine reticules of optical instruments, the dials, indicators, and gauges of present-day scientific apparatus. It is thus that man circumvents the inherent limitations of his visual sense, and explores with relative ease phenomena that otherwise would be shut off from his view.

Listen Here!

The normal human ear is sensitive to sound in a frequency range of approximately nine or 10 octaves. With advancing years, sensitivity to the higher frequencies of sound often diminishes. Man has a different auditory range than some other mammalian species. For example, high-frequency dog whistles are widely sold that can scarcely be heard by the human being, but which sound loud and clear to Fido even at considerable distances, as evidenced by his quick response to a blast on them.⁹

We can close our eyes or turn our heads away from something we do not wish to see, but may exclude sound from the ears only by plugging them, and then at best partially. Furthermore the ear, in contrast to the eye and to the chemical senses as a whole, is not readily fatigued. This means that the ear loses little in sensitivity even when exposed to a loud and prolonged sound. Furthermore the normal human ear is stimulated by extremely weak sounds. In fact it has been demonstrated that if the ear were but slightly more acute, the human being would hear "thermal noise," which is the sound of random vibration of molecules within the auditory nerve. As a result of inability to close the ear, and of the extreme sensitivity and lack of adaptation of the auditory sense, the human ear (at least of those persons who dwell or work

in centers of population) is constantly assaulted by sound, day and night. How then is it possible to sleep at night, and how is it possible to segregate extraneous auditory impressions from the sound that is the focus of attention at the moment? The answer to these questions introduces the first inkling of what will be developed as the keynote of this discussion; namely, the role of the central nervous system in excluding unwanted sensory impressions, but receiving the desired impressions with maximal acuity. For it is only through such exercise of selectivity by the higher nervous centers that the inchoate mass of sound, that constantly assails the ear, is transformed into a meaningful succession of auditory sensations.

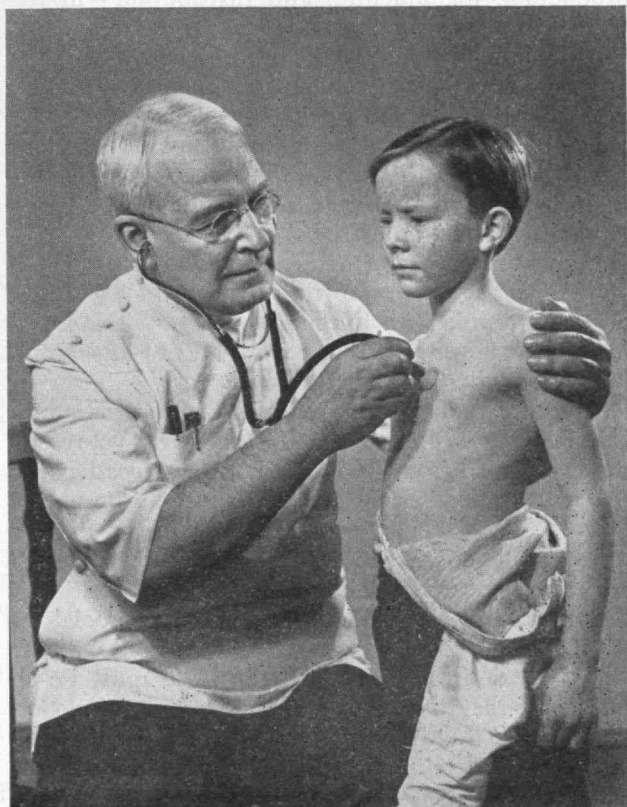
Auditory Aids of the Future

Just as man has the rare gift of binocular stereoscopic vision, he also enjoys the faculty of binaural stereophonic hearing. This ability apparently results from extremely fine discrimination between time of impact of auditory signals upon each of the two ears. The existence of stereophonic hearing may readily be proved by observation of persons who lack hearing in one ear. Such individuals have obvious difficulty in localizing sounds, as for example identifying which of several scattered office telephones is ringing. The value of the stereophonic faculty has been recognized to the extent that binaural hearing aids are under development at the present time.

The fact that the hearing aids as presently used are applied to only one ear epitomizes the crude state of these instruments. Monaural hearing aids are in a primitive stage of application comparable to that of eyeglasses when the user was required to squint through a single lens. It is to be expected that the de-

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Harold M. Lambert



Contemplation; Its Status in Our Society

*A Bit of Meditation, Now and Then,
Befits the Most Salubrious of Men*

By JULIAN A. JOFFE

A BRILLIANT young man visited our country, during the early years of the last century, and upon returning to his native France recounted his experiences and observations. Even today, 115 years later, de Tocqueville's comments are pertinent.¹ He found "that in no country in the civilized world is less attention paid to philosophy than in the United States." This lack of interest in contemplative pursuits even extended to a dislike for the various schools of thought into which Europe had always divided itself.

He found our entire community "simultaneously engaged in production and commerce," an extremely unusual situation. In Europe, this spirit of gain was restricted and circumscribed, whereas here all were addicts. "... In America, then, everyone finds facilities, unknown elsewhere, for making or increasing his fortune." To de Tocqueville it seemed that the pursuit of wealth had so gripped the people that neither energy nor inclination remained for developing the human mind for the "pleasures of imagination and the labors of the intellect."²

One of our founding fathers, a prolific writer and expounder of dogmatic statements, added considerable substance to the sentiments that the values of life are attained through utilitarian labor. Franklin's theme³ centered about the belief that our problems and those of the world could be resolved through production, manufacture, and distribution—in the cheapest manner possible and in the largest quantities.

Although he wrote two centuries ago, Franklin's aphorisms yet echo today. In our contemporaneous world where values are being reweighed, the President and leaders of Congress upon many occasions have expounded the advice that what ails others is their inability, inexperience, or unwillingness to work industriously and industrially.

Frank Crane, pastor and journalist, expressed the views of many when he wrote that he "believed that the only trouble with Europe was that, unlike America, it had never learned to work and to love work. Many thought that America, in exporting factories, techniques, and efficient industrial organization to Europe, would confer a blessing that might yet rescue the Old World from an almost hopeless decadence."⁴

We take great pride in being a capitalistic nation for we "regard wealth as the best means for an ever more complete satisfaction of every conceivable need" and "as the means for improving" our "own position."⁵ For capitalism to function unimpeded, all social institutions must be organized to be in tune with its aims and desires. Obviously, the state must be so fashioned that the capitalistic society can function unimpaired. "Let it prepare the ground by guaranteeing security; let it predispose the minds of men by

education; and let it establish freedom, so that the economic machine . . . may so function as to achieve the maximum . . . that will mark the triumph of the capitalistic spirit."⁶

It is essential that the milieu be correct for our capitalistic spirit to flourish.⁷ The atmosphere has to be regulated, controlled, and organized so that individual efforts and activities may attain their fullest scopes. All actions and means must be guided toward the end that individual economic utility may attain its fruition. Such are our principles and criteria.

Sorokin has a number of interesting observations to record along the same line of reasoning. He writes that "anything that does not permit of a utilitarian control tends to be neglected; anything that does is elevated to the dignity of a scientific or valid proposition."⁸ The writer is in complete accord with Sorokin's statements concerning the aims, purposes, and goals of our educational systems. Unsuccessful efforts over a number of years to bring an institution of collegiate rank to a suburban community rather forcefully demonstrated that most people seem to believe it is more important to have good mechanics, stenographers, and so on, rather than scholars and thinkers. The state with greater alacrity spends millions on advanced vocational schools than upon colleges and holds that "... the educational system . . . is first and foremost a training school devoted to 'useful knowledge' and the crafts. Its chief business is to prepare successful business men, craftsmen, engineers and technicians, politicians, lawyers, teachers, doctors. . . ."⁹

When he was here more than a century ago, de Tocqueville discovered similar traits, although today many of us picture ourselves as being highly modern with our views. "It is evident that in democratic communities the interest of individuals, as well as the security of the commonwealth, demands that the education of the greater number should be scientific, commercial and industrial, rather than literary. Greek and Latin should not be taught in all schools. . . ."¹⁰

In former years and in other countries, religions set the patterns for society. It was not so long ago that the Church served as our arbiter for all matters of ethics, morals, and daily living. The rise of a naturalistic society destroyed the grip that the Christian Church held over Western society for more than a millennium. Today, the desire for pecuniary gain takes precedence and serves as the mainspring of society.¹¹ "Economic aims" have been isolated to become the "object of concentrated and systematic effort," until they are now the "authoritarian standard expediency."¹²

Those of us who are in business recognize the difficulty of thinking, after the average arduous day devoted to toil. There is just so much energy to which we are heirs and we find that competitive existence is

¹ Please see references at end of article.

extremely taxing and enervating. After work, we are just plain tired! Our leisure activities bear this out.

Mannheim has written very concisely and cogently upon the aforementioned. Within society there are six possible cultural patterns that individuals may pursue to give it direction, substance, and goal. Such persons or groups who guide and inspire the society's character are its elite. Mannheim lists them as, "the political, the organizing, the intellectual, the artistic, the moral, and the religious."¹³ "Sparta may be cited as an example of a civilization in which the political and military elites repressed all others, while in the United States the elites have been absorbed in the problems of organization, and this has determined to a very large extent the intellectual outlook of the whole nation."¹⁴

When our chores for the day are done, we, as a nation, relax in a uniformly characteristic manner, with few variations. Needless to say, there are some who do not follow the pattern. For instance, de Tocqueville wrote: "In democracies, dramatic pieces are listened to, but not read. Most of those who frequent the amusements of the state do not go there to seek the pleasures of the mind, but the keen emotions of the heart. They do not expect to hear a fine literary work, but to see a play."¹⁵

More recently Sorokin described his observations in similar tone but with different words. Thus our culture has become "increasingly a commodity manufactured primarily for the market . . . and aimed almost exclusively at utility, relaxation, diversion and amusement, the stimulation of jaded nerves or sexual excitation."¹⁶ In music, opera, and the movies we find our disturbed senses responding to "comedians, clowns, murderers . . . smugglers . . . insane persons . . . and the exotic or erotic types. . . ."¹⁷ Our literature depicts the same maladies as music, being replete with thrillers about "warped and morbid characters . . . insane and criminal types . . . wrecks . . . derelicts. . . ."¹⁸

In the more active fields of sport, most of us derive our exercise through vicarious participation in an extremely passive manner. We watch others being active, whether it be in stadia, in the movies, or at home on television.

The mere possession of wealth is no criterion that the fortunate one will use his leisure in a way different from him who must toil incessantly. "Comparative studies in the use of leisure show at first glance that a higher position, larger income, and increased security do not necessarily lead to culture. Unless material advancement is combined with personal example and the persuasion exercised by the pressure of intelligent standards for the use of leisure, it may end in boredom, neurosis and general decadence."¹⁹

One of my business acquaintances, a Scotsman, in his earlier days used to tell me that he liked "to cogitate." He is now a good deal older, very successful and burning his life away at a frightening pace to maintain and further expand the business he has wrought with his driving energy. I have not heard him use the term "cogitate" in many years. He has no time to think of anything but business!

It is realized that conflict and competition are the real enemies of contemplation. "This is the real reason why the Church allowed monks to engage in any sort of activities except commercial ones. Even begging . . . was considered compatible with the contemplative life."²⁰

Our mimesis is centered about the functioning of an organizing producing elite. They establish the pattern, we follow. "A Society which uses up all its energies in organization leaves little opportunity for introversion, contemplation and reflection."²¹

There are literally tens of thousands of aphorisms and quotations that may be used to illustrate the intellectual atmosphere in which we are raised. Some are taken from the Romans, others from modern writers and many who lived in between.

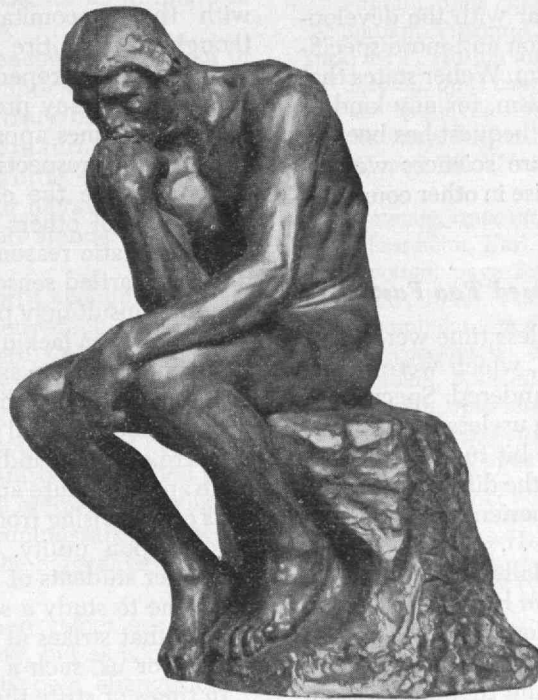
Just what is this contemplation which the Puritans so vehemently discouraged?²² Possibly, the best way is to investigate what other peoples have done and are doing about it. We are indebted to the great German

sociologist, Max Weber, for his penetrating insight, as translated and edited by Messrs. Gerth and Mills. "Confucianism was the status ethic of prebendaries, of men with literary education who were characterized by a secular rationalism. If one did not belong to this *cultured* stratum he did not count." Their influence carried far.²³

India is replete with contemplative orders, from the "Brahmans, *educated* in the Veda . . . the non-Brahman status group of ascetics (who) emerged by (their) side and competed with them . . . (through those in) the lower strata with their plebeian mystagogues . . . Buddhism was propagated by strictly contemplative, mendicant monks, who rejected the world and, having no homes, migrated. Only those were full members of the religious community; all

others remained religious laymen of inferior value: objects, not subjects, of religiosity. . . . During the Islamic Middle Ages, contemplative and mystical Sufism attained at least an equal standing (with the world-conquering warriors of its first period). . . . During the Middle Ages Judaism fell under the leadership of a stratum of intellectuals who were trained in literature and ritual, a peculiarity of Judaism."²³

The "Asiatic and . . . Indian world religions" . . . have been characterized and "strongly determined by



Metropolitan Museum of Art

a genteel strata of intellectuals devoted to the purely cognitive comprehension of the world and of its 'meaning' . . . contemplation became the supreme and ultimate religious value accessible to man. Contemplation offered them entrance into the profound and blissful tranquility and immobility of the All-one."²⁴

We find that usually the oriental religions point "out the path to salvation by exemplary living, usually by a contemplative and apathetic-ecstatic life." Ours, however, is the type that "addresses its demands to the world in the name of a god. Naturally these demands are ethical; and they are often of an active ascetic character." In our society "the attitude of active asceticism has repeatedly retained supremacy over contemplative mysticism and orgiastic or apathetic ecstasy."²⁵ "In their innermost beings, contemplative and ecstatic religions have been rather specifically hostile to economic life . . . they lead away from everyday life and from expedient conduct."²⁶

The central root "temp" (in the word "contemplation") is from Latin, signifying time. In this article we are endeavoring to explore the mental, as opposed to the physical, usage of time in our society. One may express wonder as to the manner in which we arrived at the state wherein as a society we devote so little time to contemplative thought. It did not develop out of nothingness. There was a very concrete cause which is historically discernible to anyone who is familiar with the development of the Protestant Reformation and more specifically with the growth of Puritanism. Weber states that utilitarianism arose from Puritanism, for any kind of contemplation was suspect. Their bequest has been so penetrating that even in the pure sciences we lag. Great fundamental discoveries arise in other countries.

Has Industrialism Progressed Too Fast?

The Puritans taught us that unless time were spent upon usefully resultant products, which were physically valuable, the time was squandered. Speculative thought was discouraged as being useless and dangerous.²⁷ To develop this thought a bit further, most of us who are old enough will recall the difficulty that the youth of a generation or so ago experienced when seeking recreation and diversion. "In . . . societies . . . affected by Christian and especially the puritanical theology, play and recreation have been looked upon as immoral. Just as the expression of the biological interests was taboo in all Christianity, Calvinism and pietism, in particular, took the stand that play was an immoral waste of time and energy, that it had its roots in evil design and that it led man away from the religious and moral life demanded by the divine plan of salvation. . . . In the puritanical theory not only was the flesh a handicap to man, but man was also required to suppress and control his more natural desires by useful work, sobriety and thrift."²⁸

We have introduced Western techniques throughout the entire earth and are in the midst of continuing the process at a much augmented fashion. To the chagrin and consternation of many, opposition is snowballing to our efforts and kind intentions. Strong

doubts are being expressed — whither are we bound — what for — why? "*Homo occidentalis* has been overtaken by a mistrust of his own *élan* and an uncertainty about his own future which are ominous symptoms."²⁹

Those who have read Toynbee know his views: our industrialism has progressed too fast, far beyond man's ability to digest its bounties. "There is no doubt . . . that it is a moral challenge and no longer a technical challenge that confronts our own society in our own day."³⁰ We have overstressed material advances! "The industrialist has concentrated all his effort and attention upon the relations of Man with Physical Nature to the neglect of the relations between Man and Man; and he has thus heightened the effect — for good or for evil — of every human action by putting at its disposal a terrific driving power, without having taken thought to improve the wisdom or the virtue of the human beings whom he has been endowing so recklessly with these improved technical facilities."³¹

In his masterful work, Spengler³² shows that all societies pass through similar periods of birth, growth, and decay. One cannot adequately summarize a thousand page opus within a mere paragraph or two nor is any such attempt indicated here. However, it is important to observe that in their periods of decline, the societies have displayed striking uniformities. Among these may be mentioned the almost insane drive for money and other tangible evidences of physical worth, with the concomitant absence of contemplative thought. The entire energy is spent upon how to augment one's property and how to protect it.

From the many preceding observations and references it becomes apparent that our society is distinctive in many respects. We, who are part of its life, seldom realize the chasms that separate our ways from those of others of the human race. When, for some dramatic reason, the differences are thrust before our startled senses, a common reaction is to find the other insultingly peculiar. It is evident that a vital factor has been lacking in our educational system, because our utilitarian aspects of life are overemphasized to the disadvantage of the contemplative. A balance between the practical and the philosophical is needed.

There are other indications that confirm the incomplete and immature adjustment of people to the problems of life arising from the unbalanced and one-sided accent upon utility. Psychologists, anthropologists, and other students of the social sciences find that the best time to study a society is when it is undergoing a crisis that strikes at the very roots of its basic concepts. For us, such a period is during a depression.

In times of strife there arises a hunger for "belonging" which may assume almost the proportion of mass hysteria. Then we have the great religious revival meetings, and upsurges in mass baptisms. Then, spiritually lonely people turn to mystical indulgence and magical religions. They feel their lives are aimless, useless, and selfish. They hunt hooks to which to secure themselves, finding no solace in a mechanistic, impersonal mass society.³³ Others, on the fringes of society, the so-called marginal people, turn to radical organizations. When the crisis has passed and its problems have been resolved, it is this group which is hardest to reassimilate into the American body politic.

The engineer is an extremely important individual in our society. But although we may be aware of his gifts there can be no doubt that his fruits have often been exploited to man's harm. There is ever present the danger that we are not ethically prepared to receive and to understand his great contributions to society. Without stopping to evaluate his worth, too many are prone to assume that whatever the engineer produces comes under the category of progress. There is an inclination to make a fetish of the word "progress," without analyzing the significance or connotations implicit in the individual instances.

Since civilizations are the political manifestations of their respective religions, it is but natural that they too should echo the same concepts that underlie their religions. Thus, in communist countries where industrial activity becomes a duty, rather than a right, contemplation is actually prohibited. Independent thought is heretic. What is there to think about? The last word has been uttered about everything.

Numerous writers have pointed out that communism is the final stage in the degeneration of capitalism. This statement is, of course, at variance with Marxist philosophy, which sees the former as the flower that blooms from the debris of the latter. The so-called "apostles of doom" prophesy our eventual collapse because, through their studies of history, they recognize the telltale symptoms and signs of decay: accent upon inanimate machinery at the expense of man. This concept, of course, reaches its ultimate in communism.

We pride ourselves that we encourage freedom of expression, but there are too few independent thinkers in our society from whom we truly benefit by such freedom. Too often have we had to turn to Europe for original thought. But here, too little encouragement in contemplation is given, for our hierarchical criteria are built upon other values and standards that are antagonistic to it.

Industrial activity and property accumulation are the accepted principal bases upon which social stratification is evaluated in our society. Other peoples use other gauges, but all people establish social recognition of worth upon some distinct and inimitable value. The Nazis prided themselves upon spurious biological racial blood lines, while communists established their so-called classless society upon a hierarchy of political power. They have their little commissars who wield little power, all the way up to the biggest commissars with the biggest power.

Generally, the afore-mentioned values are permanent characteristics of the society, but as is becoming progressively more evident in our own, changes occur with resultant modifications in the entire structure. Thus, there is the slow but distinct insinuation of the military, as opposed to the civilian, forces into our governmental and private organizations. We find generals, or admirals, who are ambassadors, college presidents, corporation heads, and so on. By no stretch of the imagination can their influence be of the contemplative variety; rather it is supplementary to the impersonal control of industry over mankind. We should realize the implications of absorbing the military into nonmilitary positions. Do we as a society desire the trend to continue?

As a nation we are passing through an extremely important and critical time, for we may be reliving the story of Oedipus Rex. Must communism slay us, as in the Greek saga, or shall we so expand our horizons that the peoples of the world will be anxious to follow our leadership? Today we attract them through the various economic plans, because our industrial society emphasizes accumulation with the necessary freedom to pursue further accumulation. But suppose that, in addition to our purely utilitarian way of life, we abounded in philosophy, in great art, in masterful music, in writers for the ages. Would not then the response to our democratic way of life be enthusiastically wholehearted rather than merely a marriage of convenience? In short, would not the encouragement of contemplative pursuits make us a greater and happier people, with many more real friends in the world of nations than now appears to be the case?

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"In January 1947, the Faculty of the Massachusetts Institute of Technology appointed the Committee on Educational Survey to review the state of education at the Institute. The Committee was instructed to re-examine the principles of education that had served as a guide to academic policy at M.I.T. for almost ninety years, and to determine whether they are applicable to the conditions of a new era emerging from social upheaval and the disasters of war."

Such is the opening paragraph of the foreword in the Report of the Committee on Educational Survey of the Massachusetts Institute of Technology which was released for public distribution late in September, after two years of deliberation by the Committee itself and almost a year of further discussion by the Institute's Faculty.

Unlike Harvard's American Education in a Free Society, the current report is not a broad survey of the whole field of education in the United States, nor is it intended to be. As it has been to a large degree from the beginning, M.I.T. will continue to be a university of limited objectives and unity of Faculty, with its educational program polarized around science and engineering; the report is likewise limited in its objectives.

Aside from making drastic changes in the world in which we live, science and engineering, themselves, are undergoing continual change and rapid expansion. It is evident that the world of 1950 is not composed of that comparatively easygoing, complacent society which existed in 1865 when the Institute first offered its courses. Science and engineering have become, as never before, part and parcel of our everyday lives, and require intelligent understanding and support from the average citizen. But it is equally true that the scientist and engineer of today must have a broadened horizon, considerably beyond that of their grandfathers, if they are to continue to serve society effectively. Thus, at the conclusion of World War II, the time was ripe for a critical re-examination of the professional education offered by the Institute.

This article presents a summary of those portions of the committee's 150-page report which discuss the philosophy of professional education at the Institute. It is believed that this material (which, incidentally, leads the way in calling for better understanding of the social implications of science and engineering on the part of technically trained personnel) will be of particular interest to Technology Alumni and others interested in technical education in the mid-Twentieth Century. Other portions of the report which have less bearing on professional training in science and engineering because they deal primarily with matters of internal administration, are not included here. Those interested may obtain the complete Report of the Committee on Educational Survey of the Massachusetts Institute of Technology for \$1.25 per copy from The Technology Press, Room 14-S132, M.I.T., Cambridge 39, Mass.—Ed.

M. I. T. Educational Survey

Full Acceptance of Institute's Broader Educational Mission,

in Which the Social Sciences Play Important Role,

Approved by Faculty in Three-Year Study

FULL acceptance of a broader educational mission involving concepts of a university with new but limited objectives that call for pioneering and leadership, is recommended in the report of a survey recently completed by a committee of the Faculty of M.I.T. The survey was carried out by the Committee on Educational Survey which was appointed in 1947, at the request of the Institute's president to review the state of education at M.I.T. and re-examine the principles of education that have guided academic policy at the Institute for almost 90 years. Its task over the past two years has been to determine whether these principles are applicable to the conditions of a new era emerging from social upheaval and the disasters of war.

The recommendations of the committee call for new experiments in education and new exploration into the unknown involving vision and leadership of a higher order, not only in engineering, but in the natural sciences, the humanities and social sciences, as well as in architecture and city planning. The committee's report discusses the educational philosophy developed at the Institute, the improvement of professional education, a broader educational mission, sponsored research, and organization of the Faculty for greater unity and effectiveness.

In making its recommendations the committee expresses its belief that this goal must be achieved without departing from the philosophy of limited objectives that has contributed to the strength of the

Institute in the past. In its introduction to the report, the committee says:

We are awake to the knowledge that our rich and prosperous nation cannot withdraw into isolation. We have discovered that the social institutions of the United States are subject to forces similar to those that are molding the destinies of Europe and Asia. The very concepts of democracy, of equality of opportunity, and of leadership are shifting and developing in the American mind. The utter waste of two world wars confronts us with the necessity of considering the finite limits of our national resources.

Even more significant, and perhaps more threatening to our present form of democracy, is a persistent tendency to growth and centralization of control in all organizations and institutions, industrial, financial, educational, and labor. There is a concerted effort to increase the efficiency of management and to eliminate fluctuations in economic and social status.

One must at times wonder whether the price of some of these changes may be an ever-diminishing premium placed on the man who is different, on the function and qualities of imaginative and creative leadership.

Democracy as we have known it for more than two hundred years is the fruit of leadership that rises from the initiative and individuality of the people. If this nation is to hold to a high goal, it must continue to cultivate a superiority of spirit and intellect. Since the war, there has appeared a new national consciousness of the responsibility for providing education to all of our young men and women commensurate with their ability. But in broadening the educational base, let us not stifle individuality by seeking uniformity; let us not fail to discern the gifted mind, to foster special talents, and to provide an environment in which these may flourish. . . .

Reviewing the problems of enormous expansion during World War II and an increase in the demand for higher education, the committee emphasizes that increased diversification and increasing numbers of students threaten the unity of Faculty and student body which has been one of the Institute's greatest assets. It recognizes that "wider interests, wider service, bring about more complex administrative procedures and that these are part of the opportunities of added power and prestige."

The size of the Institute should be limited, the report suggests, by its ability to attract high-caliber students. While the report reaches no quantitative conclusion about the size of the Institute, it states that "in our judgment there is some evidence that the optimum size may already have been exceeded." It believes that stabilization of student enrollment at approximately the present or slightly lower level is desirable. The report says:

We believe that the mission of the Institute should be to encourage initiative, to promote the spirit of free and objective inquiry, to recognize and provide opportunities for unusual interests and aptitudes; in short, to develop men as individuals who will contribute creatively to our society in this day when strong forces oppose all deviations from set patterns. . . . Our task, as we see it, has been to consider how the Institute may accomplish these purposes most effectively.

Learning by Doing Is Basically Sound

Reaffirming its faith in the basic premises of William Barton Rogers, who founded M.I.T. in 1861 and

THE EDUCATIONAL SURVEY—

SUCCINCTLY SUMMARIZED

All education should prepare men for social responsibility; all education should concern itself with ends as well as means, with value as well as technique.

• • •

The mission of the private institution is to provide a kind of education that cannot be obtained elsewhere, sufficiently superior to attract the exceptional student.

• • •

The mission of the Institute should be to encourage initiative, to promote the spirit of free and objective inquiry, to recognize and provide opportunities for unusual interests and aptitudes; in short, to develop men as individuals who will contribute creatively to our society in this day when strong forces oppose all deviations from set patterns.

• • •

The committee advocates that M.I.T.'s program be constructed principally for those who take a four-year undergraduate curriculum and then do or do not go further in graduate work.

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The committee finds there are four fields of activity which should now be cultivated at M.I.T.: (1) Engineering; (2) Science; (3) Architecture; and (4) the Humanities and Social Sciences.

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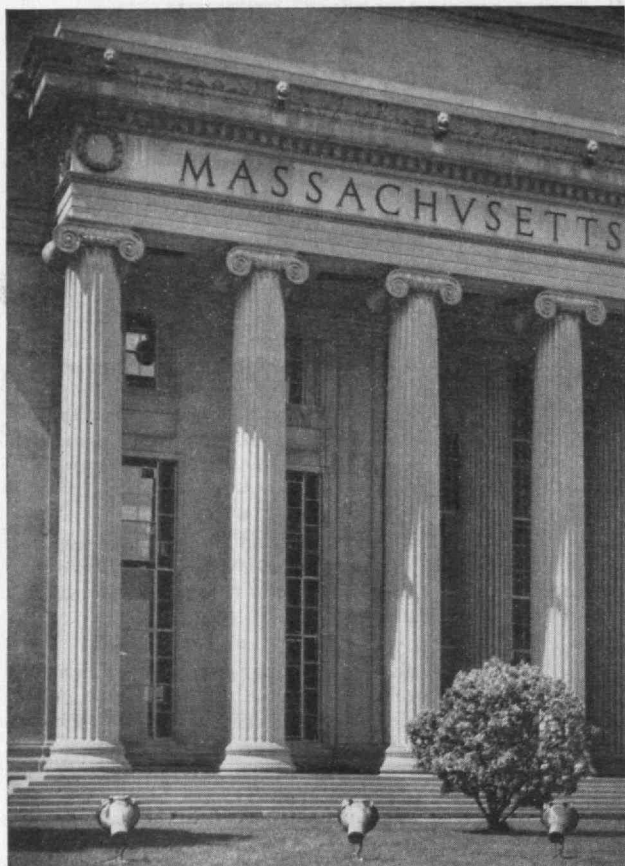
In broadening the educational base, let us not stifle individuality by seeking uniformity; let us not fail to discern the gifted mind, to foster special talents.

• • •

We must learn now how to incorporate research, sponsored by a variety of external agencies, into our plan in such a manner as to strengthen and sustain the educational program, without placing in jeopardy the freedom of thought and liberty of action that lend to academic life its very special flavor.

was its first president, the committee finds that the premises of his philosophy of professional education are still valid today. Rogers believed in the "educational value of useful knowledge." He believed in learning by doing, which is not to be confused with the acquisition of manual dexterity, but rather the means by which students learn to seek out and come to grips with facts. This principle, then revolutionary, is now commonly applied in the clinical teaching of medicine and in the case method in schools of law and business administration, as well as in science and engineering. The Institute's founder also believed in introducing professional education at the undergraduate level and combining with it the basic elements of a liberal education. Rogers was convinced that engineering education must enable a man to participate effectively in what he termed "the humane culture of the community."

Undergraduate education in a technological school, the committee finds, has two objectives, the professional and the general. Though convenient to make this distinction for discussion, it must be remembered that it is primarily a distinction in objective and not necessarily in educational methods or materials. All parts of the education should contribute to both ends. Continuing, the report states:



William M. Rittase

All education should prepare men for social responsibility; all education should concern itself with ends as well as means, with value as well as technique. We reject the view that there is one particular curriculum suitable to prepare men to be the leaders of society, and another distinct type suitable for specialists in techniques who are to be the servants of the policy makers. We believe that if the problems chosen for study are alive and complex, with social and ethical dimensions, the curriculum of the technological school can be an excellent medium for the development of leaders competent to handle the urgent social and political problems that now confront the world. . . .

To provide this kind of breadth, the committee recommends that the Faculty "adopt as a basic policy the principle that the primary objectives in undergraduate years are general ones of developing intellectual power rather than accumulation of information; and sensitivity to a variety of values and broad understanding of nature and man rather than specific competence in a narrow field." To implement such a policy, the report recommends:

1. That the subjects of instruction be improved by reducing the detailed content and by increasing the emphasis on fundamental principles and upon the development of powers of judgment and discernment.
2. That the humanities staff be strengthened and that instruction in the humanities and social sciences be fortified by extending the time allotted to these subjects in the common curriculum and arrangement of subject sequences which will develop depth as well as breadth.
3. That greater allowance be made for individual differences in student aptitudes and interests.

4. That care be taken not to load the student with so many obligations that he has no chance for reflection.

The committee also recommends that specific efforts be made to improve the quality of undergraduate teaching by increased recognition of effective teachers, guidance for the younger and relatively inexperienced members of the teaching staff, and improving the campus environment to make it most conducive to effective teaching.

Privately Endowed Institutions of Learning

The problems of privately supported universities and colleges were studied by the committee and the report rehearses the dilemma confronting all institutions of higher learning which derive their principal support from private funds. It believes that these institutions must not go out of business, but it recognizes that education at such institutions is likely to cost the student more money than elsewhere. "We believe," said the report, "that the mission of the private institution in this era is to provide a kind of education that cannot be obtained elsewhere, sufficiently superior to attract exceptional students. We believe that the Institute can provide such an education . . . if we take advantage of the many opportunities that lie ahead both to improve the education that we now offer and to extend it into new and promising areas hitherto undeveloped."

Recalling the original concept of M.I.T. as a university with limited objectives, the committee endorses this principle without reservation, pointing out, however, that time changes emphases. It recommends increased emphasis in certain areas, particularly in science, the humanities and social sciences, but only when there seem to be opportunities for unique contributions. Such changes should be accomplished, the report suggests, less by expansion than by the wide curtailment of activities that have served their useful purpose.

Undergraduate Curricula

The report notes the great increase in knowledge now required in the engineering professions and concedes that a great many engineers must go on to graduate work. But it also calls attention to the fact that the larger number will continue to be useful citizens and often highly successful citizens on the basis of a four-year undergraduate training. It rejects the suggestion frequently made that engineering undergraduate curricula should in general be increased to five or even six years; it also rejects the thesis that engineering education should now follow the lines of law and medicine and be built by graduate work on the foundation of a general education in a liberal arts college or university. Each of these it admits will have benefit for some students but it does not accept them as general solutions; and it advocates that M.I.T.'s program be constructed principally for those who take a four-year undergraduate curriculum and then do or do not go further in a graduate school.

The committee calls attention to a shift in interest from undergraduate affairs to the graduate school and to research. It suggests that:

At this juncture we ought either to reaffirm our faith in our kind of undergraduate education and fortify it to meet the needs and competition of our day, or prepare to abandon it in favor of a different kind of institution devoted to other objectives. We have concluded . . . that the former alternative is clearly the better one for M.I.T. We reaffirm our belief in Rogers' concept of undergraduate professional education. We recommend establishment of an appropriate balance by strengthening and revitalizing undergraduate education rather than by curtailing the achievements of the graduate school.

Four Fields of Interest

The committee finds that there are four fields of activity which should now be cultivated by M.I.T.:

Engineering. It is essential that the modern engineer be able to organize and direct men. His success depends as much upon his understanding of human relations and his skill in handling men as upon his technical competence. Full achievement in his profession requires that he be a man of broad culture with a deep sense of social responsibility.

In order to train leaders in the engineering profession today it is not enough, therefore, that they be taught by competent professional men who offer instruction of the highest quality.

Science. Unlike engineering, the natural sciences are not motivated by immediate utility. But when science ranges from the abstract toward the applied, and when engineering shifts its focus from immediate applications to underlying principles, the two fields merge in a borderland area in which it is impossible to distinguish one from the other. Thus many of the great advances in engineering depend on the merging into it of science through this borderland.

In order for science to contribute to the borderland area, and thus for engineering to progress as a result of the progress of science, it is essential that the more creative and abstract aspects of science continually forge ahead in the direction of the new original, and hitherto unexplored. Strengthening of engineering by science is therefore best achieved if the environment is such that science can be pre-eminent in its own right.

Engineering can contribute to science in numerous ways: (1) by the provision of facilities that open up new possibilities for exploration; (2) by directing attention to practical needs that may suggest the investigation of unexplored aspects of natural phenomena; and (3) by inspiring a sense of satisfaction among scientists when practical uses are demonstrated for the various developments that arise from fundamental science in its more abstract aspects. . . .

Architecture. Architecture as presently constituted derives much of its strength from the areas of engineering and science. In turn, in its close association with these latter areas, it affords an opportunity for engineers and scientists to broaden their cultural and general backgrounds.

The increasing population and the growing complexity of such technological aspects of living as transportation and communication require ever greater concern with the planning of the environment that man creates for his working and leisure hours. Hence, we foresee great opportunities for the field of architecture and planning at M.I.T., where it can be closely associated with engineering and science on the one hand and with the investigation of social and cultural problems related to science and technology on the other.

The Humanities. In urging establishment of a separate organizational entity for the humanities and social sciences, the committee suggests that the advancement of knowledge be considered an essential part of the program of the school, that it assume responsibility for planning and administering the program of general education as a part of the common curriculum and that it offer professional courses leading to graduate as well as undergraduate degrees. The report says:

A primary responsibility of the school will be productive scholarship in fields logically related to the Institute's activities.

We see great possibilities for the development within this school of a center for creative work in the field of social technology and for the study of the relation between science and technology on the one hand, and man and his institutions on the other. The field need not be strictly defined. It will grow and change as have the other fields at the Institute. The impact of technology upon society is so far-reaching that every member of the staff of such a school can find an area within which he can contribute significantly to the scholarly output of M.I.T.

The school will serve the Institute by planning and administering a general educational program for all M.I.T. students, designed to develop an awareness of the interrelations of the scientific, technical, and literary cultures, and a sensitiveness to the diverse forces that motivate the thoughts and actions of people.

This general educational program, like all components of M.I.T. education, will grow out of the creative work of the departments, and it must be an integral part of the professional curricula. We ask for more than a mechanical mixture of the conventional literary and technical cultures. We ask for an integration of general and professional education suitable for the M.I.T. environment.

New courses will undoubtedly be developed in this school as they have in the others when the need for new kinds of professional education arises, when new resources become available, and when the creative work of the staff makes clear to the unified faculty the desirability of such expansion.

The four-year humanities program proposed by the committee provides for a two-year core curriculum to be taken by all freshmen and sophomores followed by eight or nine elective sequences to be chosen by juniors and seniors.

The core curriculum will consist of an intensive examination of 10 or 12 key points in the development of Western civilization. This examination will involve consideration not only of the political, geographical, and ethnic situations at these points in history, but also the state of science, of philosophy, of religious belief, of ethics, of class relationships, and of art, literature, and music.

The core curriculum is expected to provide a general historical sense of the growth of Western civilization plus some appreciation of the main elements of the contemporary American heritage. It is also expected to give the freshmen and sophomores an opportunity to determine which of the various methods of approach to the study of a culture they would like to follow more intensively in their upper-class years.

Based on this experience, juniors will be expected to elect a three-term sequence in one of three fields —

(Continued on page 60)

THE INSTITUTE GAZETTE

PREPARED IN COLLABORATION WITH THE TECHNOLOGY NEWS SERVICE

Everett M. Baker: 1901-1905

EVERETT M. BAKER, Dean of Students at the Institute since 1947, was killed in a tragic airplane crash near Cairo on August 31. He was returning from a meeting in Bombay where he had gone to preside over a meeting of the International Student Service Organization. Speaking in appreciation of him before a student assembly this fall, James R. Killian, Jr., '26, President of M.I.T., said:

In undertaking this trip as in everything else he did, Dean Baker was prompted by strongly held ideals and hopes for international understanding and for the brotherhood of man. These ideals and hopes were expressions of his deep preoccupation with the central importance of the individual and with those human values which contribute toward making the individual a better citizen and a better human being.

Here in this community we shall always remember him as a resolute antagonist of every activity that subordinated the individual to a system or that placed material values above human values. We shall remember him as the resolute protagonist of the students of this institution. He lost no opportunity to promote their welfare or to be of help to them. A student with a personal problem had top priority on his time. He never hesitated to break a rule when the rule appeared to be in conflict with the welfare of

a person. In fact, he was scornful of most rules because he felt that ideals of personal and community responsibility could always be more effective than regulations.

He felt deeply that college, along with the home, should have those qualities which make it a place where the heart is, a place to which men and women feel that they belong, a place that they cherish. He felt that colleges should be communities where the elements of democratic citizenship are learned and practiced. He felt that beauty and dignity of physical environment are essential to an educational institution, that they help to make a community or a society feel that its activities have significance and permanence. He conducted a relentless campaign here at the Institute to beautify and to humanize our campus.

In the three years he was at the Institute, Dean Baker built himself into the hearts of the community and M.I.T. is a better place for his having been with us.

Dr. Dana L. Farnsworth, Medical Director at M.I.T., has consented to serve as acting dean of students. In ministering to the health and welfare of the students, Dr. Farnsworth has worked closely with Dean Baker, whose policies he will continue in effect.

M.I.T. to Have Auditorium

Too late for inclusion in the July issue of The Review came a significant statement from Technology's President Killian, announcing that the Institute would soon add a new auditorium and chapel to its facilities. The new building will seat approximately 1,200 persons, and will be conveniently located on Memorial Drive, between Massachusetts Avenue and the recently completed undergraduate dormitory, now known as the Everett Moore Baker House, in recognition of Dean Baker's contributions to M.I.T.

Dr. Killian made public this splendid addition to M.I.T.'s physical facilities in the following words:

The generous grant of \$1,500,000 from the Kresge Foundation provides for a major objective of the Institute's Development Program. One of our primary needs has long been an adequate auditorium for public lectures, concerts, religious convocations, and other important community activities — a "meeting house" for gathering together larger numbers of the Institute community than has hitherto been possible.

The grant from the Kresge Foundation, which will also provide funds for endowment of the building, will enable the Institute to take another important step in its program of increasing emphasis on the humanities and on community activities. The chapel, a long-felt need, will enrich the spiritual life of M.I.T. and provide a desirable center for student religious groups, whose activities heretofore have been handicapped for lack of a suitable meeting place.

Never in the history of the Institute has there been so strong and wide an interest in extracurricular activities of the type that require the facilities of a large and well-equipped auditorium. That the new building will be a great contribution to the cultural program of our students



M.I.T. Photo

EVERETT MOORE BAKER

Dean of Students at the Institute, 1947-1950

is indicated by the fact that their activities now include three glee clubs, a symphony orchestra, a popular orchestra, a concert band, a drama shop, a debating society, the annual musical show, and many professional activities.

The auditorium and the small chapel, which will be architecturally related to it, will not only serve the educational and religious interests of our students and Faculty, but will afford us the opportunity of sharing them with our neighbors in the community, as for example, the Popular Science Lectures for which the Institute has never had a hall adequate to meet the demand for seats from secondary school students and the public. The auditorium will be so designed that it will be used for multiple purposes, including public lectures.

Going Up!

CONSTRUCTION of the Sloan Metal Processing Laboratory, designed to house a pioneering program of education and research in metallurgical science as applied to basic manufacturing processes, began the third week in August at M.I.T. The new building, provided by a gift of \$1,000,000 to the Institute from Alfred P. Sloan, Jr., '95, chairman of the board of General Motors Corporation and honorary chairman of the Institute's Committee on Financing Development, is scheduled for completion in the fall of 1951.

It is being built adjacent to the Guggenheim Aeronautical Laboratory, at the corner of Massachusetts Avenue and Vassar Street on the Institute's main campus, and will share its principal entrance and certain other facilities with that building. Four stories (with an additional penthouse) in height, the Sloan Laboratory will be of contemporary exterior design and will be completely equipped for all major types of metal forming and machine-tool work. The first two floors of the building will, in general, be devoted to instruction and research in machine-tool operations, with particular research emphasis on metal-cutting studies. On the third floor will be metalworking and

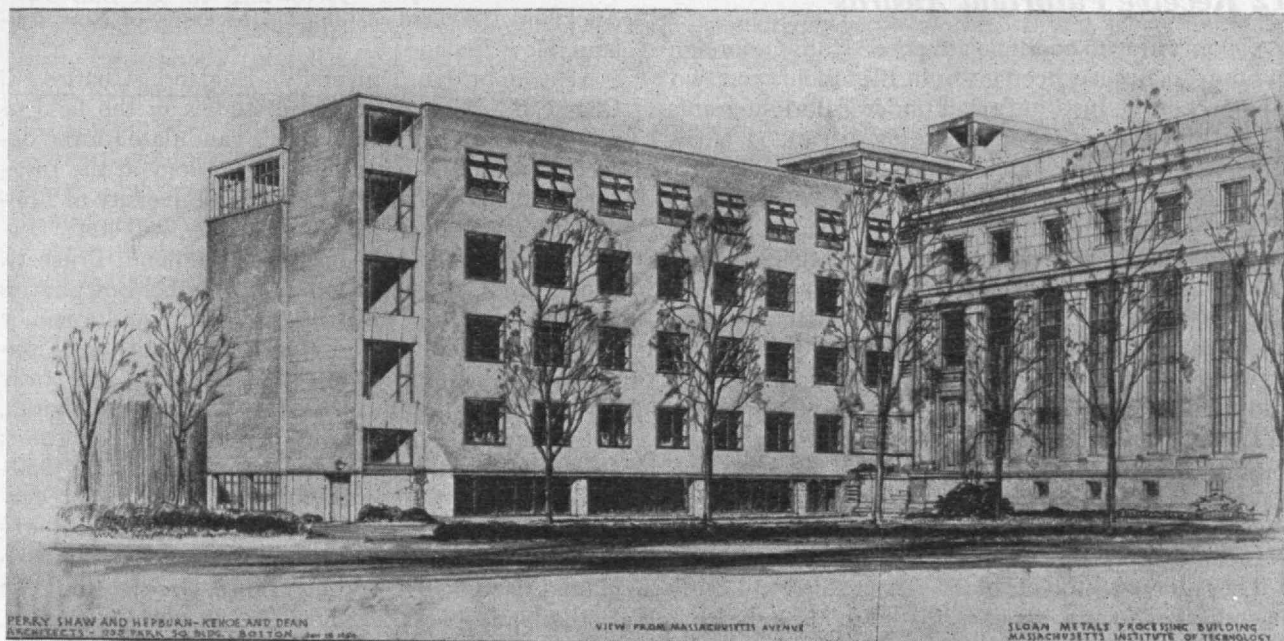
powder metallurgy equipment and, on the fourth floor, a well-equipped foundry and welding laboratory. Recitation rooms and lecture demonstration halls will be located throughout the building.

The new laboratory will provide the first adequate housing for the metal processing program at the Institute, which was inaugurated in 1946 under the direction of Professor John Wulff of the Department of Metallurgy. It is administered jointly by the Departments of Metallurgy, Mechanical Engineering, and Business and Engineering Administration. A unique feature of the new building now under construction will be a penthouse "common room" above the fourth floor, for the use of all students and Faculty members. Equipped with a complete kitchen and dining facilities, this room will be designed to stimulate social contacts among and between Faculty and students.

"Our aim in planning for this room," according to Dr. Wulff, "is to provide a social climate integrated with the laboratory's professional aims. Here different student professional societies, as well as individual students, may meet alone or with faculty to discuss problems of mutual interest. We believe this is an essential attribute of an educational program designed to train engineering students for leadership in the production industries."

The Metal Processing Laboratory was created as an interdepartmental laboratory in recognition of the need for a broad basis to the metal processing industries. "Its objective," stated Professor Wulff, "is to bring the application of both metallurgical science and engineering design to the basic crafts of machining, finishing, casting, forging, welding, deep drawing, and related techniques of modern manufacturing."

Graduates, whose awareness of the technical phases of metal production and whose personality and outlook fit them to cope with human problems of production, such as labor relations, are particularly needed



Now under construction at M.I.T., the new Sloan Metal Processing Laboratory will be completely equipped for all major types of metal forming and machine-tool work. The building, which is scheduled for completion late in 1951, will house M.I.T.'s pioneering program of education and research in metallurgical science as applied to basic manufacturing processes. Its construction is made possible by a gift of \$1,000,000 from Alfred P. Sloan, Jr., '95, chairman of the board of General Motors Corporation.

in industry, according to Dr. Wulff. The active participation of the staffs of the Departments of Economics and Social Science, and of Business and Engineering Administration in the laboratory's over-all program is therefore particularly welcome.

Since its inception the laboratory has been housed in inadequate quarters, and the steady growth of its activity has made the new facilities increasingly needed. About 1,500 students at the Institute take undergraduate or graduate courses within the laboratory's jurisdiction each year, and at least 30 graduate students are now using its facilities for thesis research. In addition, research project work under government and industrial contracts in the laboratory amounts to more than \$150,000 annually, according to Dr. Wulff.

The new building, of reinforced concrete frame construction, will be faced with buff brick trimmed with limestone. Large window areas will feature the top and bottom floor areas, and generous windows will be provided throughout. On a caisson-type foundation, the building will measure 52½ by 244½ feet. The top-floor location of the foundry, immediately under the penthouse, will simplify ventilation problems, since only short stacks will be needed to bring waste gases through the roof. Elsewhere in the building, mechanical ventilation will be used.

Perry, Shaw and Hepburn, Kehoe and Dean of Boston are the architects for the structure, and construction work will be by the Platt Contracting Company of Cambridge.

The Metal Processing Laboratory will be the second M.I.T. building to bear the name of Mr. Sloan. A gift of \$225,000 in 1946 made possible enlarging the Sloan Laboratories for Aircraft and Automotive Engines, toward which Mr. Sloan had already contributed \$100,000. His gifts to the Institute over the past 30-year period have totaled more than \$2,000,000.

12 Receive Fulbright Awards

OPPORTUNITY to continue advanced study in foreign universities has been given to 10 students and two members of the Institute's staff under Fulbright grants by the State Department, according to Paul M. Chalmers, Adviser to Foreign Students at M.I.T.

Professor Joseph H. Keenan, '22, of the Department of Mechanical Engineering, has been awarded a Fulbright grant for a period of six months to serve as a visiting lecturer in engineering in England. Professor Keenan, who is chairman of the first Massachusetts Chapter of the Atlantic Union Committee, has accepted the invitation of the University of Cambridge and the Imperial College of Science and Technology in London to divide his time between these two institutions from February to August, 1951.

Walter S. Pierce, '47, an instructor in the School of Architecture, plans to continue his studies at the Ecole Nationale Supérieure des Beaux Arts in Paris.

The student recipients of the scholarships will study at the following universities in the fields indicated: George B. Baldwin, candidate for his doctor of philosophy degree in industrial economics, will study economics at the University of Durham, England; Irving A. Breger, '47, who received a Ph.D. degree from



At the dedication of the Dugald Caleb Jackson Room last June, Professor Gordon S. Brown, '31, snapped the Kodachrome from which the above reproduction was made. Mrs. Dugald C. Jackson (seated) is shown with friends of the family and representatives of the Department of Electrical Engineering. The room, to be used for symposia and informal conferences in the Department of Electrical Engineering, is named in honor of Professor Jackson, Head of that Department from 1907 to 1935, and until his retirement, senior partner of the firm of Jackson and Moreland, consulting engineers.

M.I.T. last June in geology, will study the geochemistry of coal at the Technical College, Delft, the Netherlands; John W. Carr, 3d, '49, a candidate for the degree of doctor of philosophy, will study mathematics at the University of Paris, France; William W. Vicinus, Jr., '49, who holds a renewal of last year's grant, will continue his studies in chemistry at Oxford University, England; John H. Auten, a candidate for the Ph.D. degree in industrial economics, will study problems of economic stability in primary production areas at Auckland University College, University of New Zealand, New Zealand.

At Cambridge University, England, Charles E. Chase, Jr., '50, will continue studies in the field of physics; Arnold H. Glaser, '42, a candidate for the degree of doctor of science in meteorology at the Institute, will study that subject at the University of London, England; Peter M. Gutmann, '50, will study economics at Cambridge University, England; Bruce H. McCormick, '50, will continue in the field of physics in England at the University of Cambridge; Lawrence F. Vassamillet, '47, who received his master of science degree in physics at M.I.T. last June, will study crystallography at the University of Liège, Belgium.

By the Fulbright award, approximately 600 grants for study abroad are included in the program for 1950-1951. Funds awarded under the Fulbright Act are foreign currencies realized through surplus property sales abroad. The prizes are currently in effect in Belgium, Luxembourg, Burma, France, Greece, Italy, the Netherlands, New Zealand, Norway, the Philippines, and the United Kingdom. Agreements have recently been concluded with Australia, India, Egypt, Iran, and Turkey.

(Continued on page 38)

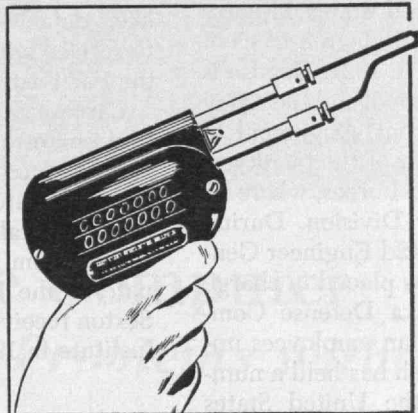
BUSINESS IN MOTION

To our Colleagues in American Business . . .

Temper or hardness is one of the important physical characteristics of a metal, because it affects both manufacturing processes, and the service given by the finished product. Manufacturers are generally aware of this fact, and the more complicated the piece and the fabrication methods, the more attention is paid to temper and annealing. However, it is often the case that an apparently simple part may require equally thorough consideration. Such was the case with an electric soldering "gun," which uses a $\frac{3}{8}$ -

inch copper rod as the secondary of the transformer and a smaller rod for the tip. It is necessary for the rod to be sufficiently rigid, yet at the same time it must be soft enough so that during fabrication, involving shearing, coining and bending, the metal will not break, split or crack. A certain temper of rod was tried, and became twisted during fabrication, which made it difficult to assemble and interfered in other ways with the manufacture and use of the device. The cure turned out to be a slightly harder temper, hard enough to prevent the twist, but not hard enough to result in fractures during fabrication. Proper temper was the key to a perfect job, not only for the transformer secondary, but also for the soldering tip itself, which likewise has to be coined, punched, and formed into the necessary shape.

Says the manufacturer: "In addition to being extremely helpful in arriving at the proper tempers, Revere also recommended that we specify our rod in multiple lengths, and thus save considerable on scrap. They were also helpful in solving the problem of attaching the brass sleeve to the secondary rod."



The users of the soldering gun of course have no idea of the amount of testing and investigation that was necessary in order to make the device practical and advantageous for them. This is true of practically every product, whether it be a super-accurate laboratory balance for which Revere may supply metals, this soldering gun, or an automobile which may contain many pounds of Revere Copper, Brass and Bronze to assure satisfactory operation.

The point of this story is that Revere's interest in

your problems by no means ends with the receipt of an order. It may well precede the order, and be maintained through very practical cooperation until you, as well as we, are convinced that the requirements of manufacture and use have been met to the maximum degree. This practice of cooperation between suppliers and manufacturers is rather common throughout industry. The paper mill and package maker will gladly work out with you the best material for your

packages, for example. If you buy chemicals, the chemists may come up with something better or cheaper for your purposes, or suggest an advantageous shift in processing. There are many different types of rubber and rubber-like substances, and of glass, wood, plastics. You cannot be expected to know all about everything you buy, nor is it necessary. Simply permit your suppliers to work out with you, in full knowledge of your problems, the specification and fabrication of the material best suited for your needs. No matter what you make nor from whom you buy, the opportunity to benefit by the knowledge of your suppliers is always open to you.

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Topgallant Appointments

Two Department heads, one full professor, and one associate professor have been named to serve the Institute since the last issue of The Review was prepared. Professor George C. Manning, '20, becomes acting head of the Department of Naval Architecture and Marine Engineering; Colonel Charles F. Baish, '21, assumes duties as professor of military science and tactics in charge of that Department; Egon Orowan comes to the Institute as a full professor on the staff of the Department of Mechanical Engineering; and Captain Horatio C. Sexton, '23, has been appointed associate professor of naval architecture.

Colonel Baish, who began his assignment at M.I.T. on August 15 last, assumes the duties of Colonel Harold R. Jackson, whose transfer to become chief of staff for the New England Sub-Area of the First Army was recently announced.

Colonel Baish attended the Catholic University of America, graduated from the United States Military Academy in 1918, and holds the B.S. degree in Civil Engineering from M.I.T., awarded in 1921. He also is a graduate of the Army Engineer School and the Army Industrial College. Before his current assignment to M.I.T., Colonel Baish was a member of the faculty of the Industrial College of the Armed Forces, where he served as chief of the Manpower Division. During World War II he commanded the 42d Engineer General Service Regiment and later was placed in charge of Army construction in the Alaska Defense Command, with more than 10,000 civilian employees under his administration. Colonel Baish has held a number of teaching assignments at the United States Military Academy and at the Engineer School, Fort Belvoir, Va.

Professor Manning will assume the administrative duties of Vice-Admiral Edward L. Cochrane, '20 U.S.N. (retired), Head of the Department, who is on leave of absence from the Institute to serve a presidential appointment as chairman of the Federal Maritime Board and maritime administrator.

A graduate of the U.S. Naval Academy in 1914, Professor Manning is a native of Washington, D.C. After receiving the master of science degree at the Institute in 1920, Professor Manning rose to the rank of lieutenant commander in the Navy Construction Corps and from 1933 to 1939 was inspector of naval matériel in the Boston Naval District. He joined the Institute's staff as lecturer in naval architecture in 1936, was associate professor of naval architecture from 1938 to 1939, rejoined the Faculty as associate professor in 1941, and became a full professor in 1944.

Egon Orowan, one of the outstanding authorities in the general field of physics of metals who has made numerous contributions of great significance to the behavior of solids under stress, accepted the appointment of professor of mechanical engineering at the Institute last April.

Dr. Orowan was born in Budapest, Hungary, in 1902 and studied at the Technical University of Berlin-Charlottenburg, where he continued for some years as a teacher and research worker. He returned to Hungary and for some time was in charge of the Krypton Gas Works of the United Incandescent Lamp and Electric Company. This was the first plant in the world to produce krypton commercially from air as a main product. In 1937, Dr. Orowan resumed his research work on the mechanical properties of metals at the physics department of the University of Birmingham. In 1939 he was associated with the Cavendish Laboratory under Sir Lawrence Bragg, where he was head of the metal physics group and reader in the physics of metals in the University of Cambridge.

Dr. Orowan is regarded as unique in his ability to combine fundamental knowledge of physics and metallurgy with the point of view of the mechanical engineer. He has received many honors, including the Thomas Hawksley Gold Medal of the Institution of Mechanical Engineers in 1945, and election as a Fellow of the Royal Society in 1947.

Captain Sexton assumes the teaching duties of Captain James M. Farrin, Jr., '34, U.S.N., Professor of Naval Construction, who, on leave of absence, has been detached from duty at the Institute and called to service with the staff of the U. S. Seventh Fleet in the Far East.

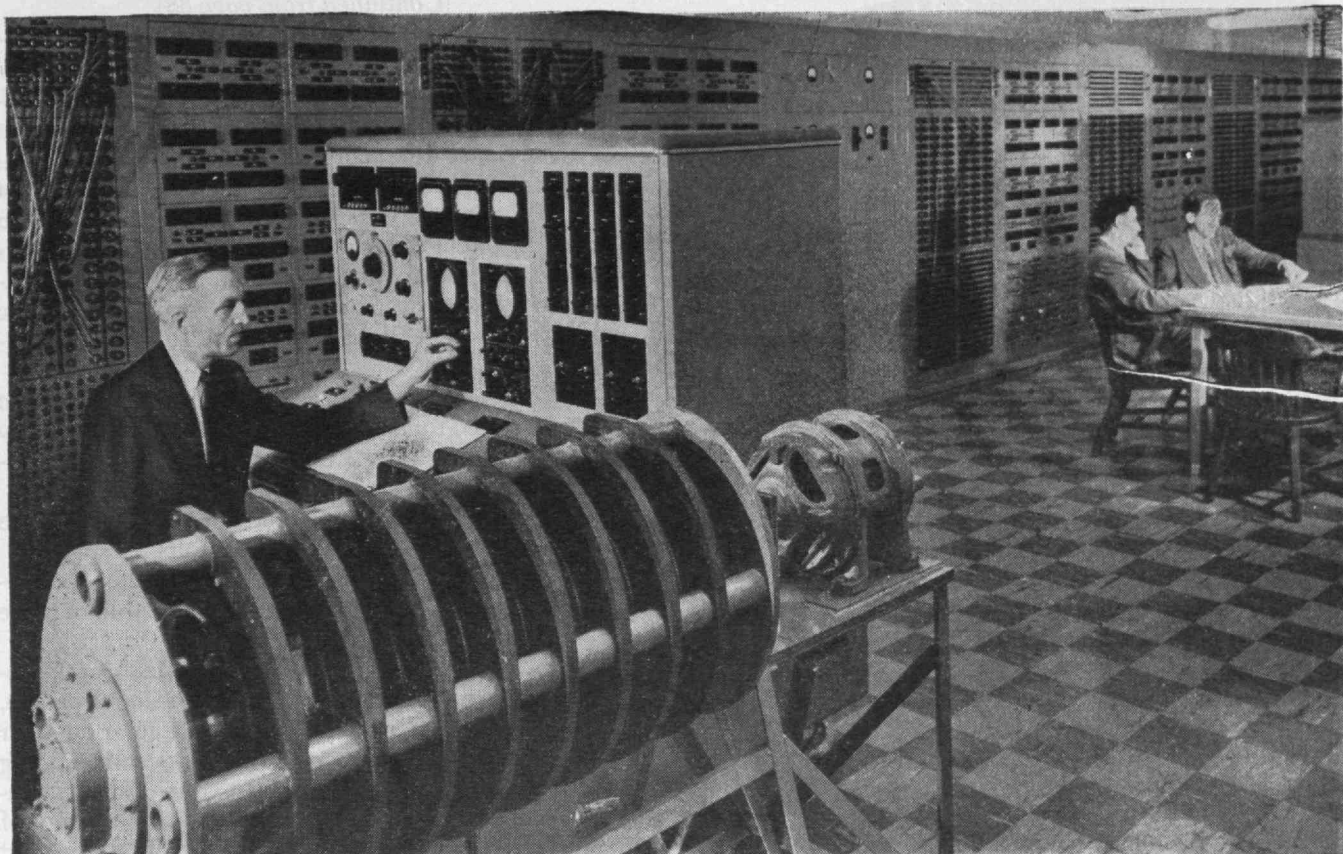
Captain Sexton, whose last tour of duty was as supervisor of shipbuilding at the Electric Boat Company, Groton, Conn., has held many positions during his naval career, including service at the U. S. Navy Experimental Model Basin in Washington, D.C. He retired from naval service on June 30, 1950. A graduate of the U. S. Naval Academy in 1920, Captain Sexton received the master of science degree from the Institute in 1923.

In the Good Old Summertime

THE unique educational resources of M.I.T. have long been taxed to maximum effective utilization during the normal school year. Indeed, throughout the past decade substantial accretions of personnel and physical equipment have been required to fulfill the heavy demands placed upon the Institute by a growing student body, as well as by industry and the government. More complete use of facilities appeared to be possible only by extending the number of days per year during which M.I.T. laboratories and classrooms, under the guidance of able teaching personnel, could be made available.

As recorded in the November, 1949, Review, it was with such an objective that the new Summer Session Office was inaugurated last year under the direction of Walter H. Gale, '29, Associate Professor of Aeronautical Engineering. It was with the purpose of providing unusual educational opportunities for professional workers during the summer months that an extensive program of special courses, symposia, and conferences was inaugurated on a large scale during the summer of 1950.

(Continued on page 40)



New Type Computer *Solves Problems without Arithmetic*

What will be the performance of a jet plane in flight when subjected to various disturbances? That's a problem to tax the most brilliant mathematician. Yet here comes a machine . . . that does the work of a "brain cell" . . . that's ready, willing and able to solve the problem, quickly . . . accurately.

This newly developed "brain cell", called the "Anacom", substitutes voltages and currents for numbers that are fed into digital-type computers . . . has solved 43 various types of engineering problems in addition to mathematical problems not arising directly from physical systems.

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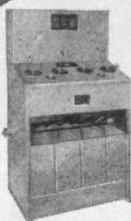
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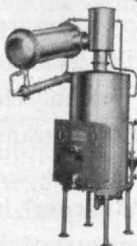
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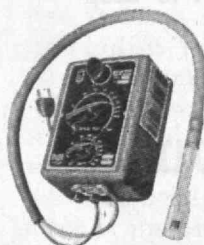
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THE INSTITUTE GAZETTE

(Continued from page 38)

The Institute's first summer of operation since the establishment of the new Summer Session Office appears to have been quite successful from every point of view. Total attendance in the regular and special subjects, excluding conferences, increased 13 per cent over enrollment a year ago, and the general reaction of staff, students, and special guests to the Institute's expanded summer program was most gratifying. Although Summer Session 1950 saw no changes in basic policy or procedures, it had three distinguishing features:

1. Conferences and special courses of instruction were arranged for advanced students in a wide variety of professional subjects, including courses for teachers of science in college preparatory schools;

2. Planned programs of recreation were available for those following intellectual pursuits;

3. M.I.T. housing facilities adjacent to the Institute's educational buildings were available to those taking part in summer courses.

An extensive program of special courses and conferences, designed primarily for professional people, was superimposed on the Institute's regular summer curricula. These events attracted many outstanding engineers and scientists to the Institute, both as students and as lecturers. The resulting interchange of ideas in which leaders in industry took active part benefited everyone concerned. Professional engineers and scientists had the use of available M.I.T. laboratories and libraries for their studies. On the other hand the Institute benefited through contacts with additional groups of leaders in industrial research.

A second feature of Summer Session 1950 was a planned recreational program for our regular students and special summer guests. The Summer Session Office provided information on all types of recreational opportunities at M.I.T. and in the Greater Boston area. A special assistant was appointed to help our guests in making plans and arrangements. Many who participated in summer courses took away a fuller realization of the Institute's postwar expansion of athletic and recreational facilities. A popular lecture series was offered by the Technology Lecture Series Committee which brought to the Institute a number of outstanding personalities in science and the humanities.

(Continued on page 42)



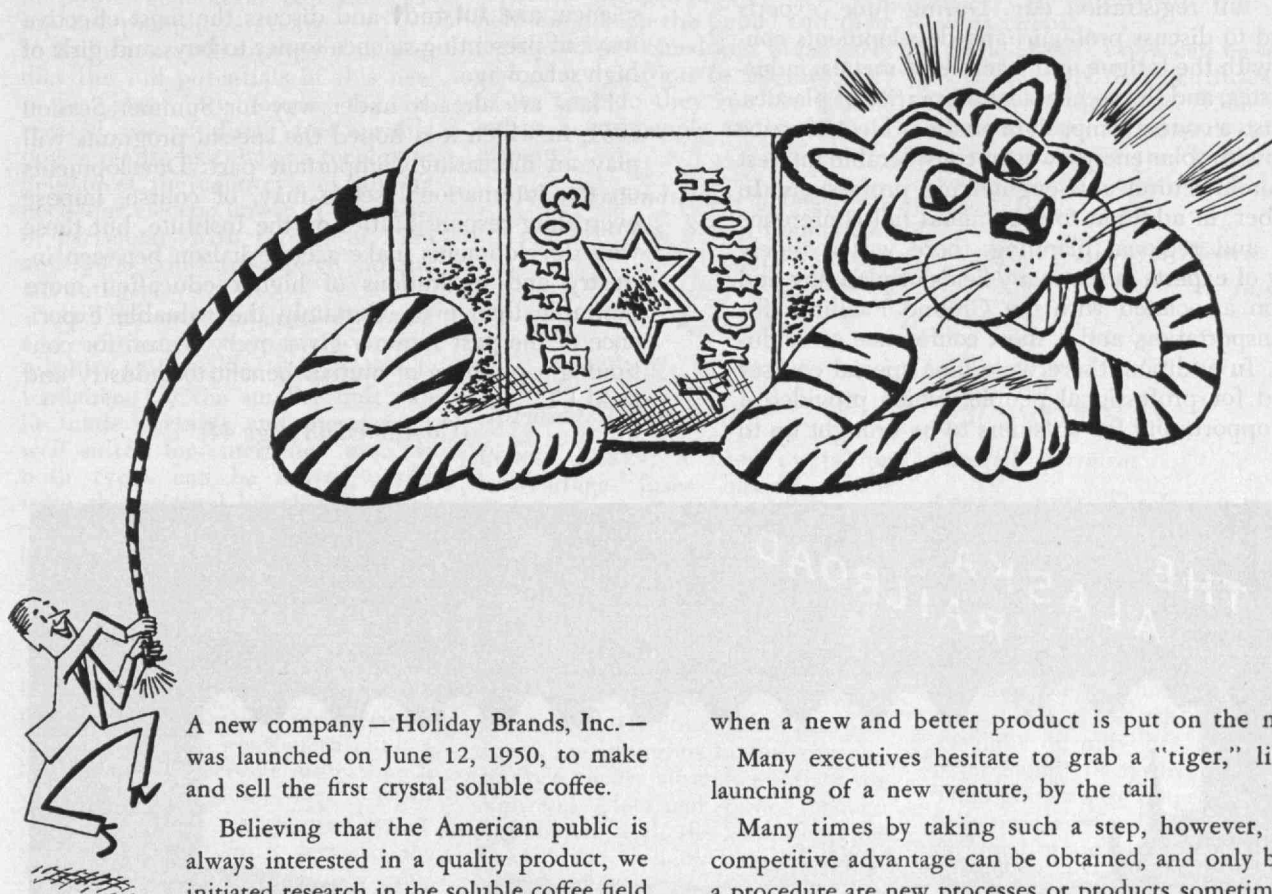
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ROBERT I. BRADLEY, '20

HOW TO GRAB A TIGER'S TAIL — AND LIKE IT!



A new company — Holiday Brands, Inc. — was launched on June 12, 1950, to make and sell the first crystal soluble coffee.

Believing that the American public is always interested in a quality product, we initiated research in the soluble coffee field based on our earlier work in the low temperature dehydration of penicillin, plasma, and other heat-sensitive materials. After two years of pilot plant operation and sales and market experience, we organized this new company to operate our process on a production scale. Today we are building a commercial plant for Holiday Brands, supplying this company with key technical personnel and transferring our technique and know-how.

Starting a new company is not an easy task. We have done this before. We have great respect for both present competitors and those competitors who always develop

when a new and better product is put on the market.

Many executives hesitate to grab a "tiger," like the launching of a new venture, by the tail.

Many times by taking such a step, however, a vital competitive advantage can be obtained, and only by such a procedure are new processes or products sometimes successfully exploited.

We have had considerable experience in the launching of new technical enterprises, and we like "tigers," the tougher the better. Our research and engineering departments have equipment, talent and experience to work on long term research projects directed toward the development of new or improved processes or products.



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THE INSTITUTE GAZETTE

(Continued from page 40)

One of the most successful arrangements of the past summer was the housing in the New Dormitory (recently named the Everett Moore Baker House) of all those attending special programs. Every effort was made to insure the comfort and enjoyment of those engaged in summer study at the Institute, and by keeping these groups together, additional opportunity was afforded for informal discussions which were a valuable adjunct to the formal program.

There were seven conferences and symposia held at the Institute between the close of the spring term and the fall registration day. During June, experts gathered to discuss problems and developments connected with the fatigue and fracture of metals, industrial wastes, and the mechanical properties of plastics. In August, a course symposium on the subject of space heating with solar energy was of considerable interest to the architectural and engineering professions. In September, in addition to the annual fall conference on city and regional planning, there was a timely meeting of experts in the many fields of planning and operation associated with the Ground Facilities for Air Transportation, and a short conference on nodular iron. In addition, there were nine special courses arranged for professional people, which provided a unique opportunity for outsiders to be brought up to

date on developments in their chosen fields, through facilities available at M.I.T.

Most of these programs were designed to appeal to research personnel in industry and therefore touched the outposts of knowledge in their particular fields. The Science Teachers' Program, inaugurated in the summer of 1949, had the completely different objective of improving instruction in science at the precollege level. The 50 science teachers who took advantage of the course under a grant of the Westinghouse Educational Foundation came from preparatory schools in 31 states. Approximately 10 women were included in this group normally engaged in teaching high-school physics, chemistry, or biology. Their six weeks' stay at the Institute enabled them to become acquainted with present progress in the forefront of science, and to study and discuss the most effective ways of presenting science topics to boys and girls of high school age.

Plans are already under way for Summer Session 1951, in which it is hoped the special programs will play an increasingly important part. Developments on the international scene may, of course, impose overriding responsibilities on the Institute, but these very developments make a close liaison between industry and institutions of higher education more desirable than ever. Certainly the valuable experience of the past summer gives every reason for continuing a program of mutual benefit to industry and to M.I.T.

(Continued on page 44)

THE
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What GENERAL ELECTRIC People Are Saying

G. B. WARREN

Apparatus Department

GAS TURBINES: For the first time in industrial history gas turbines, a new type of power plant adaptable to land, rail, or marine use, have gone into full-scale production. Orders for more than 20 of the new power plants have already been received by General Electric, for use in power generation and for gas-pipeline pumping stations.

While it is still too early to predict the full potentials of this new power plant, we foresee the increased use of direct fuel-burning power plants like the gas turbine to help meet the country's expanding needs for electric power. Two units, in particular, with ratings of 3500 and 5000 kilowatts, have unique advantages:

(1) They are comparatively small and compact, (2) they can be started quickly and require minimum attendance, (3) the smaller unit can be made portable and therefore is well suited for emergency use, (4) both types can be moved easily from the original location to meet changing power needs, (5) they need little or no water, and therefore have special potentialities, particularly in the Southwest, where low-cost gas is available and water is scarce.

Three General Electric gas turbines are already in use. Of these, the first unit to be used in this country for electric power generation has been in regular service more than a year for the Oklahoma Gas & Electric Company in Oklahoma City. A second was put into service last April by a New England power company. Another powers a developmental locomotive built at the Company's Erie Works and now undergoing tests in regular service by the Union Pacific Railroad.

*Schenectady, New York
August 15, 1950*



BERNARD VONNEGUT

Research Laboratory

RAINMAKING: Legislators in the future may well face many problems connected with cloud seeding. Laws may be necessary to prohibit and

police seeding operations contrary to the best interests of the public. Licensing of seeding operators and permits for seeding may be desirable in the future.

The extent to which new laws may be necessary to control cloud seeding depends largely on to what extent these groups now conducting these operations meet their responsibility to the public. Those scientists engaged in research in this field must keep the public and their legislators informed and must exercise every caution to be sure that at no time do they run the risk of aiding a few people at the expense of many.

*New England Assn. of Chemistry
Teachers; Storrs, Connecticut
August 25, 1950*



C. L. SCHUCK

Apparatus Department

POWER FUSES: A need exists for low-voltage fuses having much higher short-circuit interrupting capacity than that of cartridge fuses commonly used.

Cartridge fuses for circuits of 600 volts and less have been used in the United States for many years, principally in low-burden branch circuits where available fault currents were relatively low. They are produced by numerous manufacturers, and practically all makes satisfy the National Electrical Code through compliance with the "Standard for Fuses" of Underwriters' Laboratories, Inc.

In the matter of short-circuit interrupting ability, the "Standard for Fuses" includes a d-c test with 10,000 amp available, the rate of rise of the U. L. New York City testing circuit being approximately 2,000,000 amp per sec. While most applications of cartridge fuses are on a-c circuits, this d-c short-circuit

test is, even today, the only criterion in use for determining the acceptability of fuses for application on either a-c or d-c circuits.

However, no direct inference is valid concerning the a-c short-circuit interrupting ability of a fuse which has passed this particular test . . . Conversely, the a-c short-circuit interrupting ability demonstrated for a fuse is not a reliable indication of its ability to interrupt a d-c short circuit . . .

The need . . . now can be satisfied with specially designed fuses of the current-limiting type. A line of such fuses has been developed, satisfying in every respect the "Standard for Fuses" of the Underwriters' Laboratories, Inc. . . .

*General Electric Review
July, 1950*



J. P. DITCHMAN

Lamp Department

PLANT LIGHT: The farmer may now control conditions favorable to the growth of plants and animals. Among the farmer's latest implements and agents are new man-made "suns" designed to produce visible radiation, ultraviolet, and infrared radiant energy. These artificial suns may be teamed up with natural daylight or may be used entirely independent of natural conditions. Thus plants may be grown successfully underground in a completely artificial environment of light, humidity, temperature, and air . . . Our world may in the future depend very much upon how well we learn to apply radiant energy to produce more and better food and to reduce the life processes which oppose our own.

*Illuminating Engineering Society
Pasadena, California
August 21, 1950*

You can put your confidence in—

GENERAL  ELECTRIC

Projects Industrial and Governmental

THE Visiting Committee on the Division of Industrial Cooperation* held meetings at the Institute on January 20 and 21, 1950, with all members present. On January 20, the Committee met with President Kilian, Thomas K. Sherwood, '24, Dean of Engineering, George R. Harrison, Dean of Science, Nathaniel McL. Sage, '13, Director of the Division, and the other Division administrative officers, heard a discussion of the work of the Alumni Placement Bureau, and devoted the rest of the day to an inspection of some of the more important D.I.C. projects. Included among the projects visited were the ultrahigh-speed electronic digital computer in the Servomechanisms Laboratory, the Instrumentation Laboratory, the Sloan Laboratories for Aircraft and Automotive Engines, the synchrotron, the supersonic wind tunnel, the flight simulator, the Acoustics Laboratory, the Research Laboratory of Electronics, and, completing the tour, the weather radar project.

On the following morning, statistical and financial reports of the work of the Division were reviewed and various problems were presented to the Committee for discussion. The Committee was greatly impressed by the scope and nature of the research projects of the D.I.C. and with the outstanding caliber and enthusiasm of the D.I.C. personnel. The estimated total volume of the 192 research projects being handled by the Division in the fiscal year 1950 is \$12,750,000, which should yield the Institute about \$2,550,000 in applied overhead, in addition to contributing approximately \$1,250,000 toward the salaries of members of the Institute's academic staff. Some 1,879 employees are involved in carrying on this work, 538 of whom are enrolled as full-time members of the D.I.C. staff at the Institute.

The Committee reaffirmed the present Institute policy of charging overhead on industrial- and government-sponsored research projects. This policy provides for charging the full amount of M.I.T. overhead

(Continued on page 46)

* Members of this Committee for 1949-1950 were: Beauchamp E. Smith, chairman, Franklin H. Wells, '18, John W. Crowley, Jr., '20, Edward S. Farrow, '20, Thomas H. West, 3d, '22, Isaac Harter, and Irvin Stewart.

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HOW

Pine Forests

HELPED TO BRING YOU A BETTER BOILER

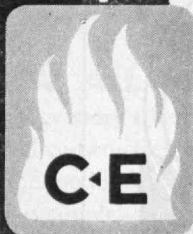
The conversion of pine to paper leaves a liquid residue called "black liquor" containing chemicals worth millions of dollars annually to the pulp and paper industry. For years the recovery of these chemicals involved a process that was laborious, inefficient and dangerous.

To meet this problem Combustion Engineering-Superheater in the late 30's developed the C-E Recovery Unit in which black liquor is burned in a furnace where it not only releases its valuable chemicals but in addition generates huge quantities of steam for power and process. So successful was this development that today C-E Recovery Units are used by leading paper companies in pulp producing areas throughout the world.

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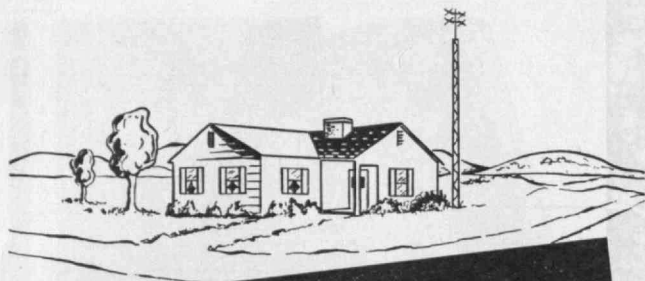
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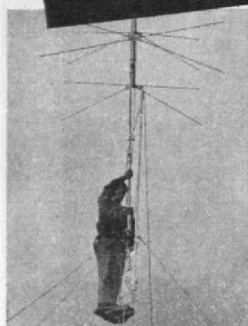
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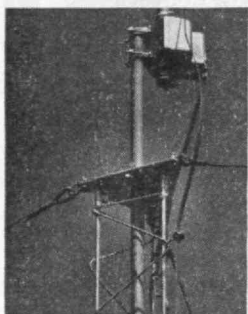
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TRYLON TOWERS and MASTS

THE INSTITUTE GAZETTE

(Continued from page 44)

against industrial projects, and a negotiated charge, currently amounting to about 42 per cent of the Institute's overhead, against government projects.

The Committee is concerned by the possibility that the Institute may be approached to undertake managerial responsibilities of government research projects away from the Cambridge area, and recommends that the Administration exercise extreme caution in considering such proposals.

The Committee reviewed the sponsorship of research projects in the Division and learned, with some concern, that 96 per cent of the work is sponsored by United States governmental agencies. In the opinion of the Committee, every effort should be made to encourage industrial-sponsored projects so as to increase the proportion of private to Federal research in the Division.

The Committee is impressed with the work of the Alumni Placement Bureau and reaffirms the desirability of continuing the operation of this bureau, which seems to be unique among educational institutions. As an aid to the bureau's effectiveness, the Committee recommends that a sample analysis of alumni records be made to ascertain the accuracy of the present records and the best methods to be pursued in obtaining the most effective use of such records for the benefit of the Alumni.

For Enduring Sustenance

IN spite of the high quality of many packaged and nationally distributed foodstuffs, certain foods still leave a great deal to be desired in their retention, for the consumer, of the original nutritional, flavor, and appeal values. Present and potential processing methods of the industry are as varied and as amenable to improved technology as has been true in the petroleum industry, in which such great strides have been made. These topics opened the discussions of the Visiting Committee on the Department of Food Technology* during its meeting at the Institute on February

(Concluded on page 48)

* Members of this Committee for 1949-1950 were: Raymond Stevens, '17, chairman, Rudolf F. Haffenreffer, '95, James McGowan, Jr., '08, Philip K. Bates, '24, Robert K. Phelan, '30, Charles N. Frey, and F. N. Peters.

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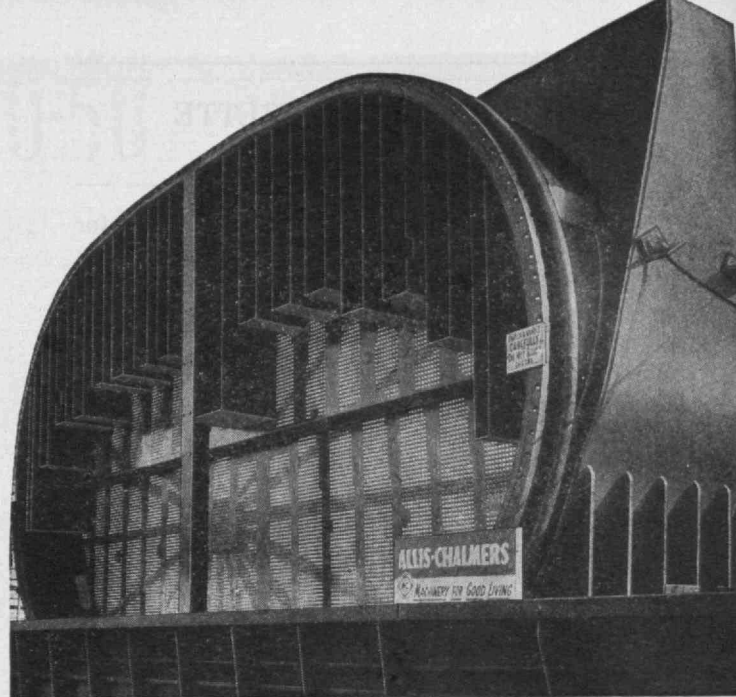
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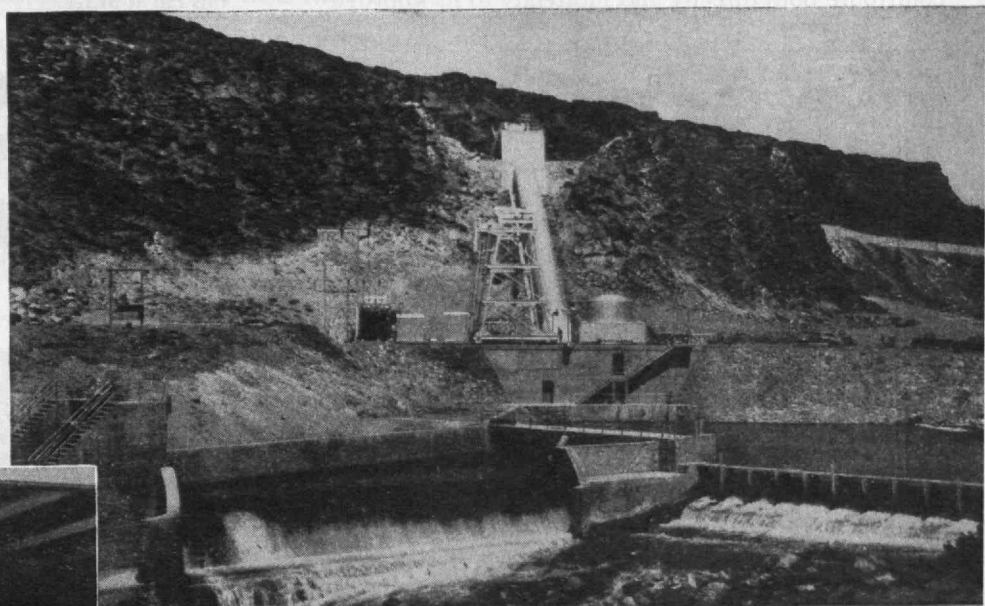


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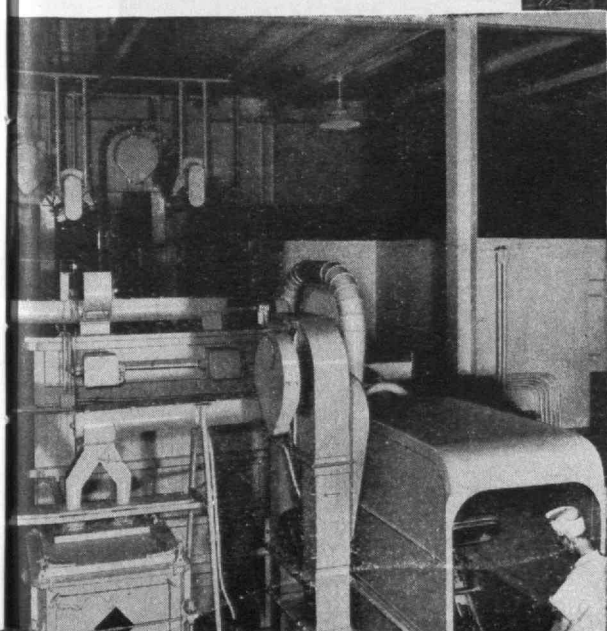
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THE INSTITUTE GAZETTE

(Concluded from page 46)

6, 1950. The Committee believes that the reasons for the establishment of the Department of Food Technology at M.I.T. are as valid today as they were when the Department was organized in 1945, that organized and centralized research and instruction in food technology should continue, and that the Department should now be established on a continuing basis comparable with that of other departments.

The Department was established, and has continued, to operate principally from the financial support from industry and foundation funds outside the Institute budget. In this respect it is unique among the Institute's recognized departments. The extent to which this high degree of financial support can be continued is not known, but it is reasonable to expect that at least a portion may be removed. The Committee's recommendation would be unchanged even should no outside support be forthcoming.

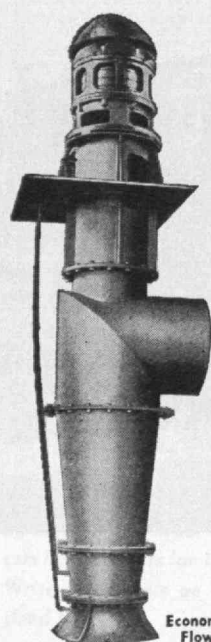
During its five years of operation, the Department has been seriously handicapped through the need to work in temporary quarters that have been crowded, hazardous, and, to say the least, unattractive. The splendid gift by the Campbell Soup Company in memory of John Thompson Dorrance, '95, is expected to remedy this condition and to give support that will contribute both directly and indirectly to its improve-

ment. The Committee believes that the Department will be strengthened by close association with the Department of Biology in the same building when the John Thompson Dorrance Laboratory is completed. It believes, however, that if biologists or biochemists are added to the Institute staff, they should be associated with one of the science departments, rather than with the Department of Food Technology.

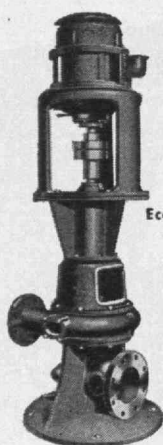
Members of the Committee would be pleased to see an extension of the present increased emphasis on biochemical engineering, and suggest consideration of biochemical engineering as a third section of the Department with a status comparable with the present food technology and nutritional chemistry groups.† Such a section would be concerned with the biochemical engineering incidental to dealing with sensitive materials in the packing, baking, and biochemical industries, generally.

The Committee is most appreciative of the co-operation given it by the members of the Department and for the participation in the Committee's deliberations by Karl T. Compton, chairman of the Corporation, President Killian, and George R. Harrison, Dean of Science. The assistance given the Committee by Charles G. King, Scientific Director of the Nutrition Foundation, Inc., whose knowledge and experience in the field were of particular value to the Committee, is also gratefully acknowledged as this report is submitted for publication in The Review.

† A course in biochemical engineering has been inaugurated this fall at M.I.T.



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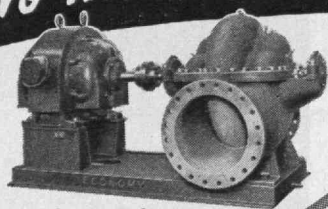


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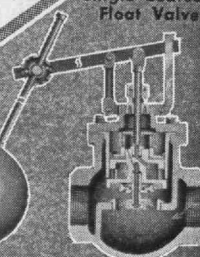
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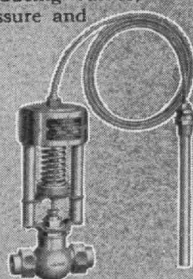
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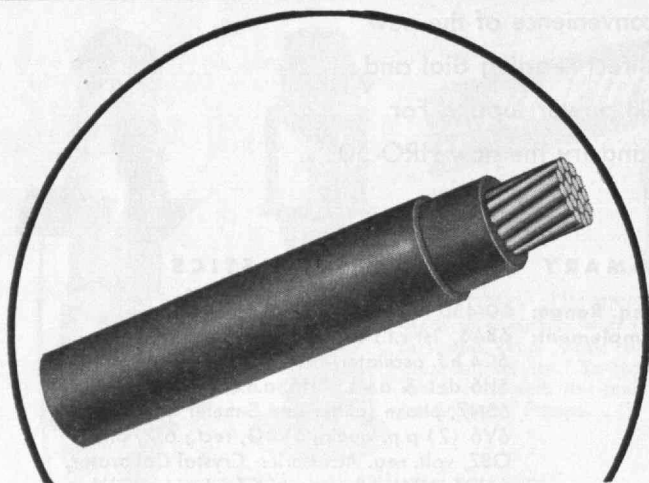
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THE TREND OF AFFAIRS

(Continued from page 16)

by means of contacts at the top of the bus which connect with feeders attached to the stop signs. If the stops for such partial recharging are 3,000 feet apart, the time required to bring the wheel to its original speed of 3,000 revolutions per minute would be but 15 seconds, whereas half a minute is required if the stops are 6,000 feet apart. It can easily be seen that the recharging times are short enough to enable the flywheel to operate at maximum energy by recharging en route, during the time the bus is stationary for taking on or letting off passengers.

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Dynamic Equipment Policy

VERY few of the several hundred books published each year in the field of business administration or economics make a significant step forward. The business administration publishing field, in particular, is noted for its colorful rebottlings rather than for its genuinely new or superior products. One of the few significant books to appear is *Dynamic Equipment Policy* by George W. Terborgh (New York: McGraw-Hill Book Company, Inc., 290 pages. \$3.75. 1949). *Dynamic Equipment Policy* is an important book not only because of its several very practical implications which may in time considerably affect the thinking of many engineers and executives, but because it develops a new and perhaps better tool for the theoretical analysis of decisions concerning capital equipment selection.

(Continued on page 52)

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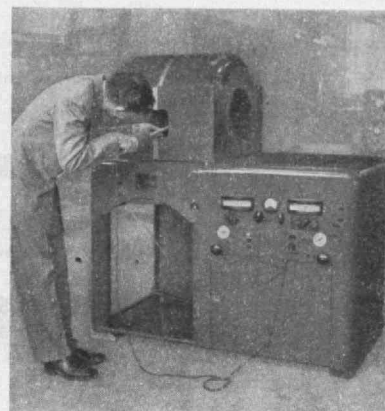
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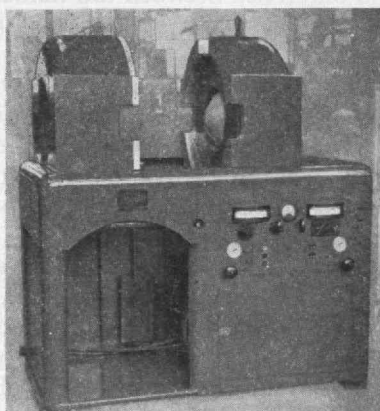
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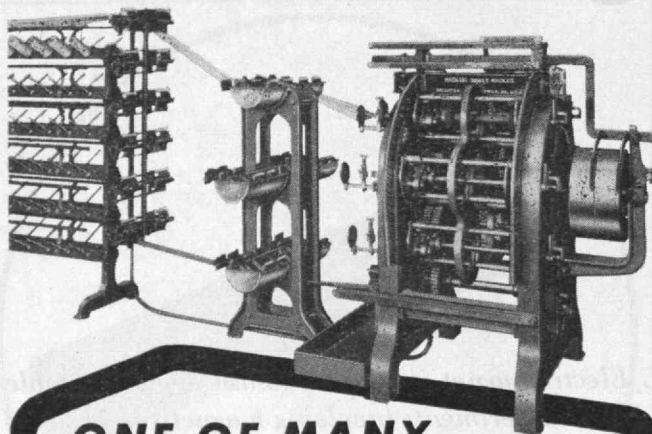
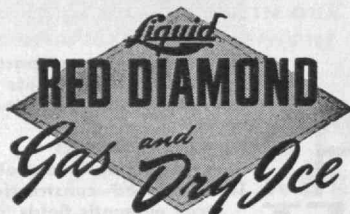
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THE TREND OF AFFAIRS

(Continued from page 50)

Traditionally, we have come to think of the field of new equipment analysis and replacement studies as a matter of taking the "proper" attitude toward sunk costs and developing what are commonly known as opportunity costs. Various formulas have been developed for analyzing equipment replacement situations, of which the respectable ones vary principally in the manner and the degree of nicety with which they consider interest rates, present values of future worth, and salvage value as a deduction from the cost of a proposed capital addition. *Dynamic Equipment Policy* uses this thinking as a foundation, and develops a theory of machine use which springs from a fundamentally different analysis of the nature of machinery choice and replacement.

If machines cost nothing, the author argues, enlightened entrepreneurs would always use the most recent and most effective machine available. Because machines also involve a capital cost, the problem of the replacement analyst is to discover what machine or succession of machines will produce the lowest combination of capital cost and cost of using other than the most recent and best machine. This is markedly at variance with the concept of computing annual savings from the use of a new machine, for instance, for the author contends that there can be no genuine savings in the use of a new machine, only a reduction in costs. The author calls this the theory of top-down measurement, and it will at once be familiar to all readers as the difference between the thinking of the wife who "saves" \$500 by buying a \$3,000 coat for \$2,500 and the thinking of the husband who merely knows that the cost of \$2,500 was less than the supposed \$3,000 cost, but who, for the life of him, cannot see a saving of \$500. The concept is worth while in that it keeps attention constantly focused upon the cost of using a method which is inferior to the best method.

Since new machines will come along the next year or the year after, and since machines do wear out and cost more to maintain as they grow older, the problem of the equipment analyst becomes one of projecting the rate at which a proposed machine will develop operational inferiority. The author develops, largely by the exclusion process, the theory that inferiority in operation is likely to occur upon a straight-line basis, which, of course, can be expressed in terms of a gradient. The use of a straight-line gradient assumption in projecting the future operational inferiority of machine A as contrasted to the inferiority to be developed by machine B permits the use of a short-cut formula for adding up capital costs and inferiority costs, which makes the use of this type of analysis no more cumbersome than other commonly used formulas in actual situations.

There are several interesting things about this approach which are of significance to both the practical

(Continued on page 54)



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*As quoted in "Journal of the American Institute of Architects," January 1950.



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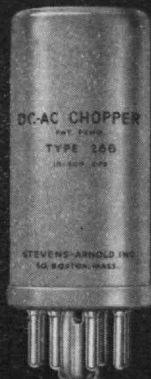
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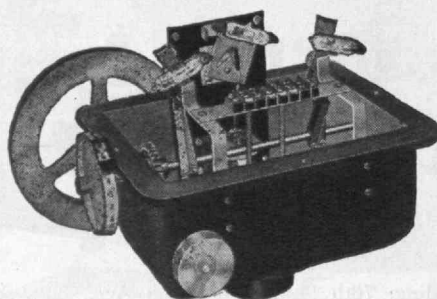
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THE TREND OF AFFAIRS

(Continued from page 52)

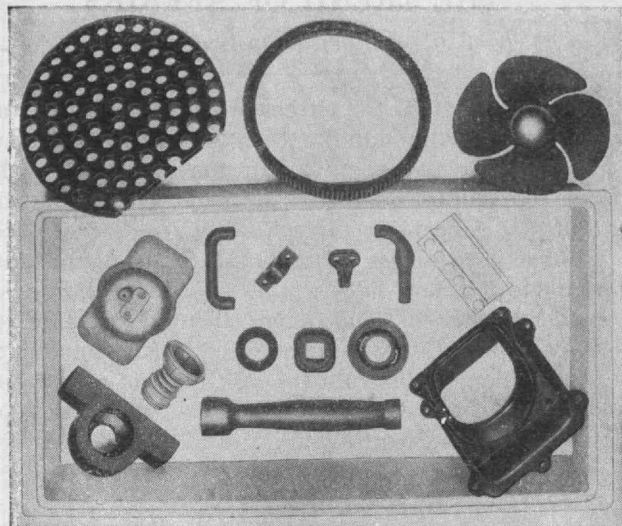
equipment user and to the theorist: First, is the use of a straight-line gradient of inferiority actually justified in many industrial and capital goods situations? The author suggests that one might shade the results of the study in cases where a radical change in the state of the art may be foreseen. There seems to be no inherent reason, however, why a curved rate of inferiority accumulation might not be used, although this would make the analysis more cumbersome. Second, is it fair always to use the lowest available combination of capital costs and operating inferiority which may be projected for a given machine as the standard of comparison, or should two machines be compared over equal service lives — or at least over lives of planned lengths? It is possible in an analysis of this type to compare costs on the basis of different service lives, which does not seem entirely fair. Third, is it proper to use a short-cut route which does not demonstrate the period in which the capital outlay will be returned? This is the financial consideration involved in machinery selection rather than the engineering one. Many equipment analysts prefer to use a year-by-year, cash-in-and-out-of-the-bank analysis principally because it focuses attention upon the recovery of the capital outlay.

The author supplies answers to all these questions but they will need more than blanket acceptance by practitioners of equipment selection and can certainly bear considerable scrutiny and statistical testing. Surely the blind use of the short-cut formula by an analyst not fully aware of its derivation and implications might be nothing short of disastrous. On the other hand, a study of operating inferiority accumulation in a firm's equipment by a sufficiently competent analyst might be of invaluable assistance in a thoroughly practical situation, and might furnish evidence which could considerably and properly shape a firm's entire policy on capital equipment replacement.

There are many encouraging things about this study. Equipment analysis has been a relatively minor topic in most respectable business administration and economics curricula. This book opens a new avenue for further study and worth-while academic activity. In the second place, modern national income economic theory is very concerned at this time with the causes and natures of capital outlay decisions. The book by Terborgh supplies a means by which to study, in even closer detail, the nature of those urges and forces which cause entrepreneurs to spend the money which makes the economic mare go. In the third place, it is the only capital outlay analysis to date which recognizes and stems from the continually changing state of industrial technology. An analysis which springs from projected operational inferiority uses as its base the ever-changing state of the art. Thus the book does indeed deserve the title *Dynamic Equipment Policy*.

(Concluded on page 56)

RUBBER DOES IT!



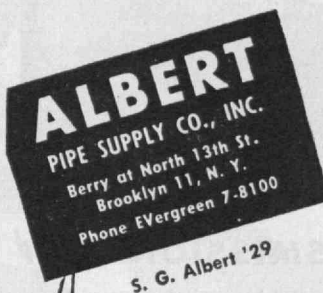
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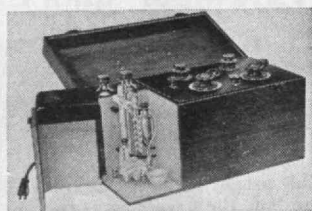
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THE TREND OF AFFAIRS

(Concluded from page 54)

Not the least of the virtues of this work is the way it is written. Although the study is necessarily a somewhat precise and lengthy affair, the author makes the way pleasant for the reader by his rather pleasing and dramatic conception of equipment use and replacement as a ceaseless battle in which older machines struggle for their lives against advancing hordes of newer machines. "The depraved jungle warfare" of the equipment, in which one machine robs another of its function, ending always in eventual "removal of mechanical cadavers" from the plant, is certainly an interesting and worth-while study.—W.V.C.

ALL EXPERIENCE IS OF CHANGE

(Continued from page 25)

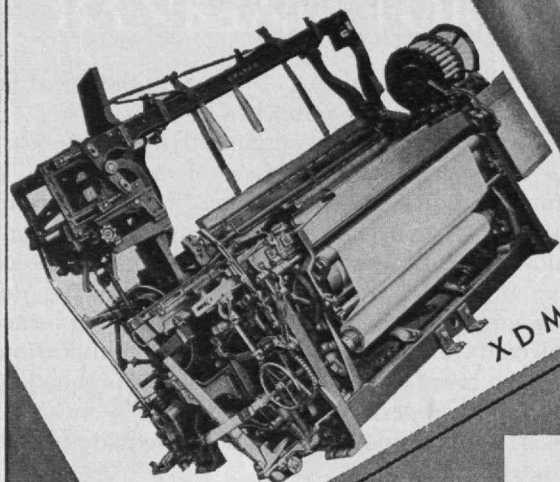
velopment of spectacles has reached a higher state than that of hearing aids because of the fact that the science of optics is centuries old, whereas the electronic advances necessary for hearing aids are relatively new. Nevertheless, it is noteworthy that availability of aids for the senses follows the same pattern as the technical importance of the senses, as well as of the extent of knowledge of their fundamental mechanisms. Aids for vision have been used for centuries. Hearing aids are just now coming into widespread use. Smell aids exist only in primitive forms comparable to old-fashioned ear trumpets, and are used mainly in laboratory studies. Aids for the cutaneous senses are unknown.

Signals for Hearing

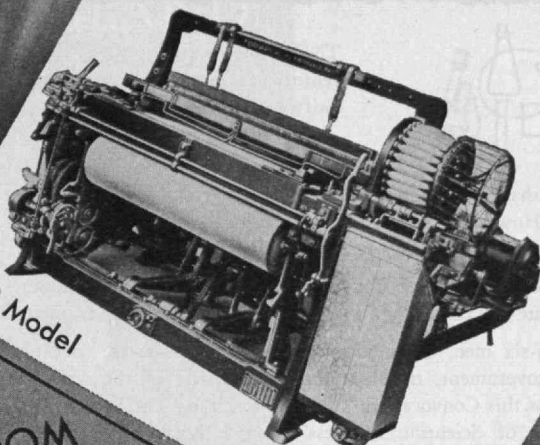
Like vision, hearing is used not only to observe phenomena, but also to transmit ideas. In the former use, hearing is more dispensable than in the latter. Admittedly some instruments, as for example the Geiger counter, make use of an auditory signal received through earphones; but this arrangement is purely a matter of expediency as a visual signal may readily be substituted. The stethoscope is the badge of the physician, but the stethoscope has been supplemented, and in some degree supplanted, by the electrocardiograph, an objective instrument that does not utilize the sense of hearing.

In the transmission of ideas, hearing has at most the advantage over vision only of speed. Anything that can be expressed in speech may be stated as well, or better, in some recorded notation for reception through the visual sense. Although the scientific convention is a recognized factor in the expansion of technical knowledge, some modern scientists prefer to stay home from these meetings, or else when attending to confine themselves to social contacts in the corridors and cocktail lounges, and to learn the tech-

(Continued on page 58)

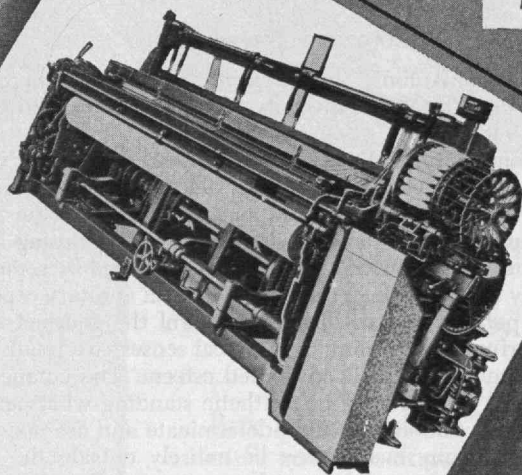


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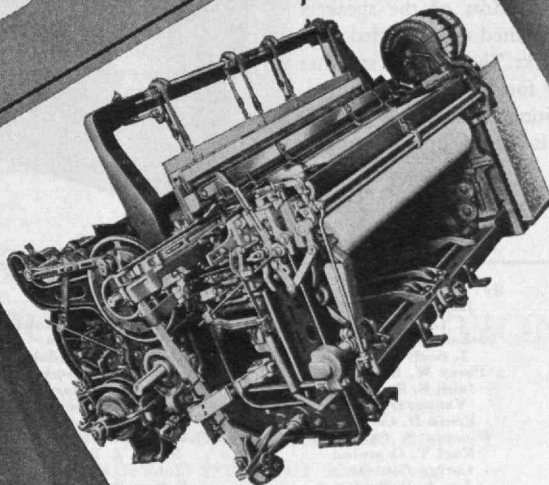


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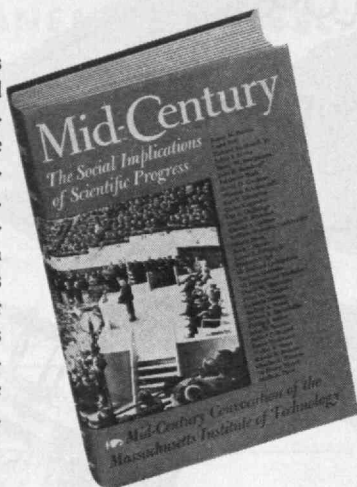
The twentieth century . . . the century of science . . . has reached halfway into history.

How shall we handle the good we have created . . . and the evil? How shall scientist, humanist, artist and man of affairs approach the next fifty years, to make them good years?

At the Mid-Century Convocation, held at the Massachusetts Institute of Technology in 1949, this problem was evaluated.

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ALL EXPERIENCE IS OF CHANGE

(Concluded from page 56)

nical content of the meetings by reading the scientific papers later as they are published.

One aspect of current scientific activity where hearing is indispensable, by reason of its value as a medium for quick transfer of ideas, is in the group thinking that has become such an important element in modern technical progress. The rapid-fire tempo of today's seminar or research committee meeting demands a quick interchange of thought that can be accomplished only through spoken communication. However, hearing just capable of comprehending speech, and if necessary enabled to do so by means of a powerful electronic hearing aid, is adequate for the research conference.

It now remains to discuss the so-called chemical senses (including smell, taste, and flavor), as well as the skin or cutaneous senses. But an examination of these, together with a discussion of some general considerations pertinent to the broad subject of the human senses, must await the second section of this article which will be published in the December issue of *The Review*.

FOOTNOTE REFERENCES

¹ Carlson, Anton J. and Johnson, Victor, *Machinery of the Body* (Chicago: University of Chicago Press, 3d edition, 1948), \$4.50.

² Moncrieff, R. W., *Chemical Senses*, page 55 (New York: John Wiley and Sons, Inc., 1946), \$4.50.

³ From the technical standpoint. However, in the arts the human senses stand in similar ranking. Painting and sculpture, experienced visually, are considered by some to occupy the pinnacle of the arts. Music, an auditory experience, perhaps falls median. The arts of the gourmet and the perfumer, appealing to chemical senses, are relatively primitive and are held in limited esteem. The cutaneous senses in general have no aesthetic standing whatsoever. But these relationships are indeterminate and are open to debate. In any event, they lie entirely outside the announced province of this article.

⁴ Woodbury, David O., "Giant Follows Giant," *The Technology Review*, 52:96 (December, 1949).

⁵ "Seeing Molecules," *The Technology Review*, 52:202 (February, 1950).

⁶ Hartridge, H., "Recent Advances in Color Vision," *Science*, 108:395-404 (October 15, 1948).

⁷ The human ear, in contrast, has a range roughly 10 times as great. An arresting conjecture in this regard is that if the eye had as broad a frequency range as the ear, certain of the radio waves that fill the ether today would be visible.

⁸ Induction is an increase in sensitivity of the retina of the eye to one color, resulting from previous but recent exposure to the complement of that color.

⁹ Stevens, Stanley S. and Davis, Hallowell, *Hearing: Its Psychology and Physiology* (New York: John Wiley and Sons, Inc., 1938), \$4.50.

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Evans, Ralph M., *Introduction to Color* (New York: John Wiley and Sons, Inc., 1948), \$6.00.

Wever, Ernest G., *Theory of Hearing* (New York: John Wiley and Sons, Inc., 1949), \$6.00.



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(Continued from page 33)

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history and government, or philosophy and the arts, or economics and social science. There will be a multiplicity of such sequences available in each of the three fields. The theory of this part of the recommendation is that the student will follow some one discipline, not that of his major specialization, with sufficient intensity to understand how specialists in that discipline work. It is thus hoped that the new humanities program will provide not only breadth but also depth.

Sponsored Research

The problems of sponsored research in engineering and scientific institutions were thoroughly explored by the Committee on Educational Survey. M.I.T. has carried on a certain amount of supported research, both government and industrial, for many years. Its experience in this field is considered an important factor among those which in 1940 placed the Institute in a position possibly unique among all American universities to undertake the responsibilities imposed by World War II. Such research activities were expected to decrease, but at the end of the war in 1945 there was no great slackening in the pace of such operations at the Institute.

In considering sponsored research the committee asks several searching questions:

(Continued on page 62)

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(Continued from page 60)



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Is all this work genuinely creative? Can it be justified on the ground that it strengthens the educational program? Is there the danger that the energy and interests of talented members of the staff are being diverted from education to income-producing work? Is it safe to rely on this source of income, to become accustomed to a standard of support that would be impossible to maintain in the event of a sudden cutback?

The serious implications of this situation are apparent. Under the pressure of an expanding program, both our physical plant and our staff have been augmented steadily. In the interest of sound planning it would seem that some reasonable balance should be achieved between commitments to sponsored research and to the fulfillment of our normal obligations as an academic institution. Clearly if M.I.T. is to retain its independence and to operate at optimum effectiveness our unity of plan and objectives must extend to this large new area of operations and must affect the selection and management of sponsored projects. . . .

The interdependence of industry, government and the universities with relation to research was made abundantly clear during the war. We must learn now how to incorporate research sponsored by a variety of external agencies into our plan in such a manner as to strengthen and sustain the educational program, without placing in jeopardy the freedom of thought and liberty of action that lend to academic life its very special flavor.

Sponsored research has obvious benefits. It permits the Institute staff to make contributions to their society; it provides the use of a large number of instruments, machine tools, and expendable materials by both staff and students; it has led to the postwar evolution of, as stated in the report:

large engineering laboratories, such as the Servomechanisms Laboratory, the Instrumentation Laboratory, and various others, that offer unusual opportunities to graduate students to become familiar with the actual processes and practical problems of engineering, while carrying on their other more academic studies.

It has provided very large facilities, supersonic wind tunnels, computers, synchrotrons. It has enhanced the educational program through the close interweaving of sponsored research and graduate study. But it has also brought about enormous new management responsibilities. The very magnitude of many projects makes it necessary for some of our ablest colleagues to devote their attention largely to administrative rather than technical problems.

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The report cites, in addition, two special problems that arise in the administration of very large research projects. The first concerns investment in money and space for exploring new fields in which the need for the facilities may later be diminished by comparable research by industry. The second is the responsibility for the most effective use in the broadest sense for large-scale research projects which are not an end in themselves, but rather a means to research. The committee's report finds:

There must be the same passionate desire to use these new machines as there was to devise them. We believe that it is a responsibility of those in charge of these projects to see that the possibilities of use are exploited as fully as are those of design and construction.

The report also warns that the predominance of applied engineering projects of large size may unduly divert attention from fundamental scientific inquiry.

The committee recommends that the Faculty and Administration, in the formulation and discharge of their responsibility for sponsored research policy, be guided by the following objectives: (1) Increased emphasis on maintaining such a balance between sponsored research and other activities that adjustment to change can be accomplished readily; (2) An expanded effort toward support of fundamental scientific inquiry; (3) A broadening of the base of sponsored projects supported by increased industrial participation; (4) Avoidance in the future, as in the past, of undertaking sponsored research primarily for the purposes of financial gain or of securing supplementary salaries for staff members.

The Committee on Educational Survey was established by Faculty action in 1946, and in January, 1947, the Faculty elected the following members: Professor Emeritus Warren K. Lewis, '05, of the Department of Chemical Engineering, Chairman; Professor John R. Loofburow of the Department of Biology, Secretary; Professor Ronald H. Robnett of the Department of Business and Engineering Administration; Professor C. Richard Soderberg, '20, of the Department of Mechanical Engineering; and Professor Julius A. Stratton, '23, of the Department of Physics and Provost of M.I.T. The committee was assisted throughout its two-year investigations and deliberations by two auxiliary committees of which Professor William R. Maclaurin of the Department of Economics and Social Science was chairman of the Committee on Staff Environment, and Thomas K. Sherwood, '24, Dean of Engineering, was chairman of the Committee on General Education.

William H. Coburn, '11

William F. Dean, '17

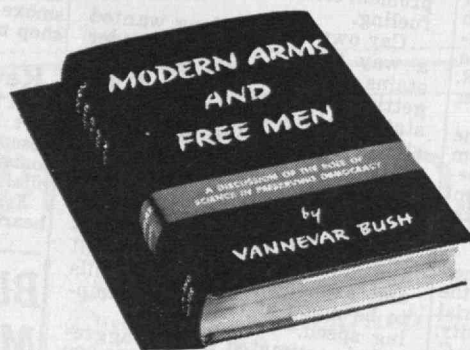
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MEN WITH A MISSION

(Continued from page 21)

it is to minister to the mind and spirit. Someone has said that "education is learning to hang up your own towel." It is also learning to hang up your roommate's towel.

I hope for you that you will accept your share of community responsibilities, that you will participate successfully in extracurricular activities, and that you will do both of these, not for purely competitive and selfish reasons, but because you come to have a love for your college and a loyalty that will make working for her something more than a duty.

The experience of living with a highly selected group of people having similar objectives and capacities, but differing points of view and backgrounds, can be in itself a formative educational experience. Your outlook and point of view can be tested and matured by the interchange and clash that come from bull sessions and all your living contacts. I hope that you will participate in much of this searching and tolerant kind of talk that comes in the late hours when the mind runs free. It is certain that you will, if you don't insist on going through college with a set of ready-made ideas and an unwillingness to try out new ones. All of this means that you must center your interest in the college community.

In the selection of courses, seek counsel but follow your own bent, where you have an election. You have your whole freshman year to decide in which direction you wish to go. Don't jump to conclusions about your teachers. It frequently happens that the courses you like least in college turn out to be the ones you cherish most, or find most useful, when you are out of college.

I would hope that you can concentrate sufficiently so that you have the satisfaction of gaining some mastery of a field. Above all, seek understanding. What someone has called the "court plaster or sheep-dip" method of college training is the curse of too many colleges. I would also hope that you will gain breadth along with acquiring depth. Some of this breadth will come from the courses you take and the teachers you come to know well. Most of it you must acquire yourself, out of an unrelenting curiosity, by reading on your own, both books and people. I hope some of your teachers will have the genius to set your mind on fire, to open wholly new vistas and to communicate to you

(Concluded on page 66)

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MEN WITH A MISSION

(Concluded from page 64)

deeply moving enthusiasms. I hope you have those intellectual experiences where some new concept or aesthetic experience or some powerful emotion throws you into a state of excitement or disturbs you so deeply that you are compelled to talk about it or share the enthusiasm with others. I hope that you will let yourself go when you are kindled by some new enthusiasm. We are too much beset in our times by fears and repressions. We need, as a people and as individuals, more capacity for enthusiasm, more receptivity to inspiration, more vehement advocacy of ideals.

One practical note. I have observed that students who get into academic difficulties usually do so because they do not plan their time, and they let work pile up. I hope that you will budget your time (this is the one way to balance curricular and extracurricular activities), and that you will keep up with your assignments, day by day. I hope, further, that you will have ample opportunities to participate in the pageantry and group activities of college life. The athletic games, the social activities, the sings are an essential part of college and can provide at times an incomparable lift and a sense of belonging.

In summary, I suppose that I have been trying to say that I hope you will realize yourself fully while in college, and that in doing so you will develop a sense of values, a recognition of what is beautiful, true, and good, in people, in books, in materials, in politics, in life. "No lesson is so important to learn," said Aristotle, "and no habit is so important to acquire, as a right judgment and a delight in fine characters and noble actions."

With these aptitudes and objectives your career here can be one of happiness and achievement, and you will become a part of the great family of students, teachers, and staff who love and cherish M.I.T.

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Alumni AND Officers IN THE News

Increased Responsibility

The election of JOHN C. DIEHL¹⁰ as president of the American Meter Company was announced in September.

WILLIAM R. GLIDDEN¹² was elected a vice-president of the American Society of Civil Engineers for a two-year term at the Society's annual meeting held in New York in January, 1950.

HAMILTON MERRILL¹² became president of Manning, Maxwell and Moore, Inc., in July.

EDWARD P. WARNER¹⁷ was re-elected for a three-year term as president of the Council of the International Civil Aviation Organization.

CHARLES MACKINNON²¹ was named a member of the board of directors for the Plymouth Cordage Company at a meeting of the board held on September 14.

BERNARD E. PROCTOR²³ is the 1950-1951 chairman of the division of Agricultural and Food Chemistry of the American Chemical Society.

ROBERT C. SPRAGUE²³ has been elected president and chairman of the board of directors of the Radio-Television Manufacturers Association.

The election of EDWARD E. CHUTE²⁹ as a vice-president of the National Shawmut Bank was announced in July.

WILLIAM W. GARTH, JR.³⁶ has been elected to the board of trustees of the Boston Museum of Science.

One life member, a special term member, and three alumni term members were elected as of July 1 to serve on the M.I.T. Corporation, according to an announcement by President Killian. The five elected are: HORACE S. FORD, life member; JOHN M. HANCOCK, special term member to June 30, 1955; C. ADRIAN SAWYER, JR.⁰², PIERRE F. LAVEDAN²⁰, and CHARLES A. THOMAS²⁴, alumni term members.

Periodical Appearance

"Clues to an Understanding of the Far East" were set forth by GERARD SWOPE⁹⁵ in the October 1, 1950, issue of the New York Times Magazine.

RUFUS E. ZIMMERMAN¹¹ is the author of an article entitled, "Some Technological and Economic Problems of the Steel Industry" published in *The Mines Magazine* of July, 1950.

The October, 1950, issue of *The American Mercury* includes an article by JAMES A. TOBEY¹⁵ which tells of "The Modern Concept of Leprosy."

MARTIN J. BUERGER²⁴ has written "Generalized Microscopy and the Two-Wave-Length Microscope," an article that

appears in the September, 1950, issue of the *Journal of Applied Physics*, Volume 21.

"Vitamins by the Ton," written by PAUL J. CARDINAL²⁴, was published in the September, 1950, issue of *The Science Counselor*.

An optimistic note is struck by CHARLES A. THOMAS²⁴ who discusses opportunities for new power sources and takes the positive view on a controversial pair of articles entitled, "What Are the Prospects for Industrial Nuclear Power?" appearing in the August, 1950, issue of *Nucleonics*.

ROBERT W. CLOUD³⁷ and SANBORN F. PHILIP⁴⁹ are the coauthors of "Vacuum Tests of Rubber, Lead, and Teflon Gaskets and Vinyl Acetate Joints" published in the August, 1950, issue of *The Review of Scientific Instruments*.

"X-Ray Diffraction by Elastically Deformed Crystals" is the title of an article by JAMES E. WHITE⁴⁹ which appears in the September, 1950, issue of the *Journal of Applied Physics*.

GEORGE R. HARRISON, staff, is the author of "The Challenge of the Ruled Grating" an article published in the September, 1950, issue of *Physics Today*.

The October, 1950, issue of *Electrical Engineering* contains a paper by JOHN C. SLATER, staff, entitled, "Structure and Polarization of Atoms and Molecules."

Honors and Awards

PAUL W. LITCHFIELD⁹⁶, chairman of the board of the Goodyear Tire and Rubber Company, was honored in Akron, Ohio, on July 15 upon completion of 50 years of service with the Goodyear Company.

EDWARD L. MORELAND⁰⁷ was awarded the degree of doctor of engineering, *honoris causa*, at the commencement exercises of the Johns Hopkins University in Baltimore, Md., on June 13.

The Dexter Brackett Medal of the New England Waterworks Association was awarded on September 20 for "the most meritorious paper in 1949," to MARSHALL S. WELLINGTON¹⁶ and SAMUEL JACOBSON³¹.

JAMES H. DOOLITTLE²⁴ won the Harmon International Aviation Award for the world's outstanding aviator "in recognition of his great leadership and airmanship during the period 1940-1950. By his outstanding personal leadership, skill, and courage he is symbolic of all who flew in the allied cause during World War II."

LAWRENCE B. ANDERSON³⁰ was one of the recipients of the Outstanding Achievement Medals awarded by the University of Minnesota on October 5.

In the Bookstalls

A second edition of *Elements of Practical Aerodynamics* was published in March, 1950, by John Wiley and Sons, Inc. The author is BRADLEY JONES¹⁰.

GORDON B. WILKES¹¹ wrote *Heat Insulation* which was published in August, 1950, by John Wiley and Sons, Inc.

Mid-Century: The Social Implications of Scientific Progress, edited by JOHN E. BURCHARD²³, was copublished by The Technology Press and John Wiley and Sons, Inc., in September, 1950. This book is a complete record of the M.I.T. Convocation of March 31-April 2, 1949, during which President Killian was inaugurated.

"Heterocyclic Compounds," Volume I: *Three-, Four-, Five-, and Six-Membered Monocyclic Compounds Containing One O, N, and S Atom*, has been edited by ROBERT C. ELDERFIELD³⁰ and published in April, 1950, by John Wiley and Sons, Inc.

WILLIAM SHOCKLEY³⁶ is the author of *Electrons and Holes in Semiconductors with Applications to Transistor Electronics* which was published by D. Van Nostrand Company, Inc., 1950. Dr. Shockley has also written an article for the October, 1950, issue of *Physics Today* entitled, "Holes and Electrons," which presents in a simplified form a portion of the above mentioned book.

ARTHUR J. C. WILSON³⁸ has written *X-Ray Optics: The Diffraction of X-Rays by Finite and Imperfect Crystals*. First publication (Great Britain) 1949, by John Wiley and Sons, Inc.

CLAUDE E. SHANNON⁴⁰ and Warren Weaver are coauthors of *The Mathematical Theory of Communication*, published by the University of Illinois Press, 1949.

Economic Fluctuations in the United States, 1921-1941, number 11 in the series of "Cowles Commission Monographs," was written by LAWRENCE R. KLEIN, 10-44, and published by John Wiley and Sons, Inc., in July, 1950.

NORBERT WIENER, staff, has written a new book entitled, *The Human Use of Human Beings*, published by Houghton Mifflin Company, 1950.

Radio Engineering Handbook, revised fourth edition, lists several Alumni on its contents page. Chapter 1: "Basis of Radio Communications," BEVERLY DUDLEY³⁵; Chapter 12: "Radio-wave Propagation," DALE POLLACK³⁶; Chapter 15: "Wave Guides and Cavity Resonators," THEODORE MORENO⁴⁹; Chapter 19: "Television," DONALD G. FINK³³; Chapter 21: "Radio Aids to Aviation," the late HARRY DIAMOND²². This is a McGraw-Hill Book Company, Inc., publication, 1950.

With the A.C.S.

The following Alumni and members of the Faculty attended an M.I.T. luncheon at the Palmer House on September 5 arranged in connection with the 118th national meeting of the American Chemical Society held in Chicago from September 3 through September 8: SAMUEL C. LIND '02, ROBERT E. WILSON '16, LAWRENCE H. FLETT '18, ALAN G. RICHARDS '19, LAUREN B. HITCHCOCK '20, MERRILL A. YOUTZ '21, CHARLES G. MOORE '22, CONRAD E. RONNEBERG '22, PAUL J. CULHANE '23, CHARLES E. HERRSTROM '24, AVERY A. MORTON '24, REGINALD L. WAKEMAN '26, GEORGE W. RIGBY '28, JACOB G. MARK '29, DAVID RUBINSTEIN '29, EGI V. FASCE '30, PAUL T. JONES '30, CHARLES E. STARR, JR., '31, JOHN B. CALKIN '32, LESTER GLICKMAN '32, GEORGE E. MURRAY '32, EDWARD N. ROSENQUIST '32, LESTER N. STANLEY '32, CALVIN H. MOHR '33, SUMNER B. SWEETSER '34, THONET C. DAUPHINE '35, DUDLEY A. WILLIAMS '35, ALBERT J. KLEMKA '36, WILLIAM S. EMERSON '37, WILLIAM H. HEALEY '37, BENTON H. WILCOXON '37, JOHN F. MAHONEY '38, ELMAR V. PIEL '38, COLLIN H. ALEXANDER '39, ELI M. DANNENBERG '39, JOHN L. OHLSON '39, RALPH F. PHILLIPS '39, HAROLD L. SMITH, JR., '39, MAYNARD E. SMITH '39, JENNINGS BRAUN '40, WILLIAM M. HEARON '40, CONRAD SCHUERCH, JR., '40, SHEN PAI HUA '41, WILLIAM D. POTTER '41, WILLIAM A. BOLHOFF '42, EDWARD M. REDDING '42, JACQUARD H. ROTHSCHILD '42, HUGH E. RAMSDEN '43, LAMAR FIELD '44, HERBERT G. GRAETZ '44, MAHLON P. ETHEREDGE '45, ALLEN M. GOLDSTEIN '47, ROBERT E. CHANDLER '48, RICHARD W. EDDY '48, C. PETER JOHNSON, JR., '48, W. BURTON LEWIS '48, JAMES H. PANNELL '48, PHILIP H. TOWLE '48, GEORGE A. AGOSTON '49, RICHARD A. COTTON '49, RALPH P. GATES '49, MAURICE A. LYNCH, JR., '49, JOHN H. POMEROY '49, LLOYD H. SHAFFER '49, MORRIS I. COHN '50, HUGH L. DRYDEN, JR., '50, STUART W. FENTON '50, ARTHUR C. COPE, staff, LAWRENCE J. HEDT, staff, HELLMUT P. PENNER, staff, GEORGE SCATCHARD, staff, and JOHN C. SHEEHAN, staff.

On the Platform

The Right Honorable CLARENCE D. HOWE '07 was one of the featured speakers during the 22d annual meeting of the Boston Conference on Distribution held at the Hotel Statler on October 16 and 17. The Conference is sponsored by the Retail Trade Board, Boston Chamber of Commerce, in co-operation with leading university business schools and trade associations in the United States and Canada.

The source of America's future oil supply was discussed by ROBERT E. WILSON '16 at the Colby College Business Management Institute on October 6.

WALTER G. WHITMAN '17 spoke at a meeting of the Boston section of the American Institution of Mining and Metallurgical Engineers on October 2. Professor Whitman's topic was "Liquid Fuel Supplies."

The 1950 Harrison Howe lecture will be given by ROBERT B. WOODWARD '36 on November 20. Dr. Woodward will speak of "Recent Advances in Chemistry of Natural Products." The lectures are sponsored by the Harrison Howe Lecture Committee of the Rochester section, American Chemical Society.

NORRIS F. DOW '39 delivered a technical paper describing "Tests on Thin-Walled Cylinders under Complex Loading Conditions" at the Third Symposium on Plasticity sponsored by the graduate division of applied mathematics of Brown University held on September 8 and 9 in Providence, R.I.

WILLIAM G. TULLER '42 presented a paper at the fall general meeting of the American Institute of Electrical Engineers held in Oklahoma City, Okla., October 23 through October 27. Dr. Tuller's paper, presented on October 26, is entitled, "Information Theory Applied to System Design."

JOHN W. M. BUNKER, staff, supervisor of atomic civil defense in Massachusetts, spoke at a meeting of the Boston section, American Institute of Electrical Engineers on October 10. Dean Bunker discussed "Atomic Hazards and Civilian Counter Measures."

Obituary

HENRY A. MEARS '85, in July, 1949.
SIDNEY A. PARSONS '85, September 27.
JAMES G. LANGDON '86, June 15.
WILLIAM C. SMITH '86, May 25.
MERTON G. WOODBURY '87, in October, 1949.
WILLIAM B. POLAND '90, June 26.*
ALFRED W. BELL '91, March 1.
ERNEST A. HERSAM '91, June 24.*
CHARLES A. BEAL '92, July 18.*
GEORGE H. INGRAHAM '92, June 29.*
HERBERT N. DAWES '93, August 14.*
HEIICHIRO MAKI '93, July 15, 1945.
HENRY W. NICHOLS '93, June 11.*
WALTER E. NOBLE '93, September 11.
RICHARD G. DUKES '94, August 12.*
HARRY P. HASTINGS '94, August 25.*
WILLIAM S. HULSE '94, July 14.
WILLIAM H. LAMBIRTH '95, August 10.
ALVAH W. STOWELL '95, July 2, 1949.
CHARLES F. WRAY '95, May 8.
EDWARD P. GOULD '96, January 1, 1938.
JOHN S. ROWE '96, November 3, 1947.
WALDEMAR L. SJOSTROM '96, December 9, 1948.
ARTHUR F. WOODSUM '96, July 9.*
DANIEL P. ABERCROMBIE '97, July 12.*
EVELYN E. MORSE '97, March 22.
WILLIAM S. RHODES '97, August 13.*
MRS. ALPHONSE BOURSAUD '98, July 31.*
SIMON FLEISHER '98, June 5.*
WILLIAM C. FOWNES, JR., '98, July 5.*
JAMES E. HAZELTINE '98, June 26.*
HENRY P. RICHMOND '98, May 23.*
ARTHUR H. BROWN '99, June 6.

DAVID E. GRAY '99, June 14.
HUGH H. HANNA '00, in August, 1950.*
HARRY C. MESSINGER '02, August 2.*
HARRY B. POND '02, May 22.*
ROBERT M. STRAUB '02, July 3.
GEORGE P. CARMICHAEL '03, July 20.
WILLIAM M. CLARK '03, August 20.
FREDERICK W. GARBER '03, August 7.
ALFRED E. LANG '03, July 6.
HIRAM F. PEASLEE '03, June 14.*
FRANK D. RATHBUN '03, in October, 1949.*
GEORGE A. BARNABY '04, May 10.
HAROLD K. LOWRY '04, May 31.
FRED W. GUIBORD '05, September 9.
WILLIAM TUFTS '05, August 11.*
EDWARD CHANDLER '06, May 30.
CHESTER C. RAUSCH '06, May 21.
MELINDA A. RHODEHOUSE '06, July 13.
E. DEXTER BOLES '07, August 21.*
J. SAMUEL COUPAL '07, June 4.*
ALFRED J. KRAFFT '07, February 17.*
MORRIS A. STEWART '07, July 31.*
CLIFFORD L. WADE '08, June 23.
DELOS G. HAYNES '09, September 22.
WALTER S. LAIRD '09, May 15.*
GEORGE L. LAWRENCE, JR., '09, August 8.*
HAROLD S. ARNOLD '10, August 7.*
ARTHUR R. DUNBAR '10, February 17, 1946.
GEORGE W. McRAE '10, July 16.*
FRANCIS G. COOKE '11, April 6.*
CHESTER T. MOREY '11, August 28.*
WILLIAM V. KEMP '13, March 17, 1948.*
ALBERT H. ANDERSON '15, in May, 1950.*
DEAN C. DUNNING '15, date unknown.
GUY H. RAMSDALL '15, June 12.
WALTER G. FARR '17, April 10.*
VIRGIL W. JORGENSEN '18, May 21.
YANAO TAKAGI '19, August 10, 1945.
ADELARD J. FORTIN '20, May 2.*
FRED E. KOWARSKY '21, August 1.*
MICHAEL V. SACHAROFF '21, January 30, 1949.*
F. LORENZ GEMMER '24, September 2.
LAURISTON E. CLARK '25, in July, 1950.
ROBERT E. PRICE '25, in 1944.
HAROLD R. WELLS '26, August 3.
A. OAKLEIGH BUSH '27, September 2.*
HARVEY N. WEED '30, in July, 1943.*
RUFUS A. SOULE '34, June 15.
DOUGLAS S. MACKIERNAN, JR., '36, April 13.
RAYMOND A. DUNN '43, July 5.*
OTTO E. WEILHAMER, JR., 6-45, August 25.
WILLIAM A. CRECRAFT '47, November 17, 1949.
EVERETT M. BAKER, staff, August 31.
WILLIAM F. BROWN, staff, September 21.

* Mentioned in class notes.

News FROM THE Clubs AND Classes

CLUB NOTES

M.I.T. Club of Central Florida

Our summer meeting was a very enjoyable gathering in the form of a barbecue at the home of President J. J. R. Bristow'14. A record attendance was recorded in spite of the tropical rains that threatened to break up the party—but mercifully spared us by ceasing 20 minutes before mealtime. Elections were held and our new officers are Laurence P. Geer'15, President; Harold J. McGillivray'38, Secretary. The retirement of A. W. Higgins'01 as president of the Florida Power Corporation was announced, and we were honored by a few words from him.—A silent prayer was offered honoring our beloved member, Bill Gabeler'15, whose recent passing we deeply mourn.—I have received many requests for a club roster, and am happy to announce that it is now complete and is in the process of being mailed.

Those attending were: David H. Hayden'99, Arville C. Redman'00, Albert W. Higgins'01, Franklin O. Adams'07, Charles J. Belden'09, Richard S. Bicknell'10, Norman S. DeForest'11, James J. R. Bristow'14, Laurence P. Geer'15, Lewis M. Dow'16, Max J. Mackler'17, Archibald H. Kinghorn, Jr.'20, Otis Angier'22, John H. Fessenden'22, Robert Velz'24, Willard B. Simonds'33, Leo C. McEvoy, Jr.'38, Harold J. McGillivray'38, Frank W. DeFelice'40, Benjamin L. Skinner'42, David B. Moyer'43, Clayton DePew'44, Marvin J. Byer'49, George E. Williams'49. Guests included: Mrs. Clayton DePew, Mrs. Benjamin L. Skinner, B. B. Ball, Dick Mayers, W. A. Stanton, J. A. Townsend, E. A. Owen, George Sward, Joe Winaker, G. E. Williams.—BENJAMIN L. SKINNER'42, Secretary, Post Office Box 157, Dunedin, Fla.

The M.I.T. Club of the Kanawha Valley

Thomas K. Sherwood'24, Dean of Engineering, M.I.T., addressed Alumni and wives of Huntington, W.Va., and of our Club at the Kanawha Country Club, Charleston, W.Va., on June 15, 1950. The sound movie, "Technology at Mid-Century" was shown after the dinner and address. Mr. Irvin L. Murray'26 presided as chairman.—MAX F. MEANS'45, Secretary, 248 Staunton Avenue, South Charleston, W.Va.

M.I.T. Club of Milwaukee

Failing to make the July issue of The Review with our club notes, we are forced to recapitulate a little. The Club met at the University Club at a 6:00 P.M. dinner

meeting on April 26. Present were approximately 30 members, divided about half and half between old timers and younger alumni. Don P. Severance'38, Secretary-Treasurer of the Alumni Association, had come from Cambridge to tell us of some of the new facilities being provided and the progress being made with the development of the enlarged campus facilities. He gave an excellent report to an interested audience. Phil Cristal'17 added a pleasant surprise by bringing Bill Campbell'15 with him as a guest. Professor Campbell is quite well known to the Milwaukee group for his activities in connection with Food Technology and the C.F.D. program. He spoke briefly about the progress made thus far on the \$20,000,000 drive.

Our summer meeting on June 24 was a delightful picnic at the Harold E. Koch'22 home on Pewaukee Lake. Mr. and Mrs. Koch were most hospitable, and provided a sumptuous outdoor supper for the occasion. Motorboating, swimming and just plain relaxing were engaged in by the following members and their families: John Ballard'35, M. F. Biancardi'40, R. E. Boeck'28, L. W. Bonns'99, Arthur Hall'25, Dan Hoffman'47, C. W. Jackson'49, A. E. Jakel'44, Joseph Kripke'40, Martin Kuban'37, E. K. McGill, 3d'38, James Martin'47, Charles Mayer'05, Johann Meier'38, B. J. Milleville'47, Robert Muzzy'50, David Nason'13, Max Nohl'35, F. J. Port, Jr.'40, W. H. Russell'26, David Smith'31, L. D. Smith'06, Paul Tausche'49, Emerson Van Patten'24, Bruno Werra'32, Stuart Westerfeld'31, and W. O. Wright'34.

The next meeting of our Club was scheduled for early in October at the University Club with the principal business the election of officers for the coming year.—EMERSON J. VAN PATTEN'24, Secretary, 6160 North Kent Avenue, Whitefish Bay, Wis.

The M.I.T. Club of New York

On June first, rain poured down on 30 hardy souls who braved the elements at the golf outing at the Westchester Biltmore Country Club. Golf scores were offered although there was some confusion over counting the swimming strokes between holes. George Dandrow'22, toastmastered the dinner afterward and awarded prizes right and left. Lobby refused to make a speech and was roundly applauded. Larry Davis'22 had just flown in from Yugoslavia and was pressured into giving a most interesting description of a week behind the Iron Curtain talking with officials of the Tito Government: "Midnight business hours, secret police, the value of a simple wooden pencil, how good it feels to be back home in the U.S.A."

Sax Fletcher'18 is chairman and George Dandrow toastmaster of the Fall Smoker. An attractive program is being planned. Don Taylor'35 heads the Steak-

Stein Dinner scheduled for club members in November. By popular demand a new style mid-year party is being planned for December. No speeches—a social evening set aside for members and their wives.

The luncheon table still holds forth every day at 115 East 40th Street. When in New York, have lunch with us.—C. PETER GRANT, JR.'35, Secretary, Grant Photo Products, Inc., 401 Broadway, New York, N.Y.

M.I.T. Club of Rhode Island

As has been the usual custom since World War II, we had our annual clam-bake at R. F. Haffenreffer's [95] Mount Hope estate in Bristol, R.I. This year's bake was held on August 25, as a joint meeting with the clubs of Fall River and New Bedford. We were very fortunate in not only having good weather but a host of distinguished visitors and guests.

Our guest speaker this year was Clark Goodman'40, Associate Professor of the Institute staff, who gave us a brief talk on "Atomic Energy Off The Cuff." Professor Goodman told us about various atomic activities at the several atomic commission plants throughout the country. During the bake, Professor Goodman had a lengthy discussion with John O. Pastore, Governor of Rhode Island who, incidentally, was made an honorary member of the Club, concerning civilian defense against atomic warfare. Everyone enjoyed Professor Goodman's discussion which received an excellent write-up in the Providence Journal as well as several "Letters to the Editor" in the same paper. Other guests from the Institute were Don Severance'38, Secretary-Treasurer of the Alumni Association, and Mal Kispert'44, Dr. Killian's right-hand administrative assistant.

Following the clam-bake, which to you non-New Englanders is about the best feast imaginable, Mr. Haffenreffer conducted us through his Indian relic museum, reputedly one of the finest in the country. Mr. Haffenreffer has in the museum over half of all the tobacco store Indians in the world, all beautifully restored to their original brilliance.

In addition to the guests and Alumni mentioned above, the following were present: E. E. Nelson'02, E. O. Hiller'04, F. W. Milliken'04, A. C. Dickerman'05, Bob Burnett'10, Ernie Loveland'15, S. H. Franklin'18, Jim Moore'19, Howard C. Mandell'20, Ralph W. Wood'21, Everett Howe'22, Royal Sterling'23, Francis A. Barrett'24, Jack Eldert'27, W. H. Hutchison'27, Al Puschin'28, Dick Coveney'29, Jules Larrivee'30, Al Sims'31, George Colby'32, Alex Daunis'32, Morris Etstein'32, Vern Linley'32, Fred Miner'32, Stewart Phillips'32, Al Stewart'32, Leonard Shapiro'34, Lee Stoloff'36, Eddie Place'37, Bruce Leslie'38, Art Rowley'38, Gene Brady'42, Carl Zeitz'42, Bud Greenwald'43, Sid Siegel'43, Clint Springer'45, Dan Kiely'47, Lloyd Turoff'47, Russ Hodges

'49, Harold Keene'49, A. W. Quinn and Paul Kistler, professors at Brown University; Eddie Parker; and that distinguished gentleman, Mat Sullivan'31 of Fall River.

At our annual meeting last May held at the Rhode Island Country Club in Barrington, the following officers were elected: Eugene J. Brady, Jr., '42, President; Alexander D. Daunis'32, Vice-president; and CLINTON H. SPRINGER'45, *Secretary-Treasurer*, 44 Church Street, Bristol, R.I.

M.I.T. Club of Schenectady

The last meeting of the year 1949-1950 was a luncheon meeting held June 20 at the Young Women's Christian Association in Schenectady. As guest speaker we were fortunate to have Harry J. Linton, superintendent of schools in Schenectady, who presented a talk on "An Elected— or Appointed School Board." This talk was timely because it has only been during recent months that a bill has been placed before the state legislature authorizing school districts to operate under a budget independent of the city budget. If the school districts are operated on an individual budget, they are eligible for aid from state funds. Dr. Linton presented pros and cons of operating with part of the school revenue being derived from state funds. He also pointed out that if the electorate did choose to have an elected board, the school board elections would be separate and at a different time than normal elections. In this way it is hoped that politics and pressure campaigns will not influence school board elections.

Present at this meeting were P. M. Currier'14, P. L. Alger'15, T. R. Rhea'24, C. F. Barrett, Jr., '34, L. H. Dee'35, G. M. Ketchum'41, D. C. Berkey'42, D. P. Strang'45, E. S. Lawrence'47 and A. M. Varner'47.

An election of new officers was held in June and the following officers were elected: W. B. Rodemann'44, President; E. S. Lawrence'47, Secretary-Treasurer.

On August 23 a meeting of the Steering Committee was held to plan programs and activities for the coming year. In attendance were C. F. Barrett, Jr., '34, Harold Chestnut'39, G. M. Ketchum'41, J. S. Quill'41, H. E. Harris'44, W. B. Rodemann'44, A. M. Varner'47, Francis Brown'48 and E. S. Lawrence'47.

Plans for alumni activity during the year 1950-1951 outside the normal monthly meetings include the following: Scholarship Committee — to aid the regional secretary in selection of worthy and deserving applicants to M.I.T. and to be available to answer questions about M.I.T. from high school seniors who are contemplating attendance at the Institute. D. C. Jackson has been appointed scholarship cochairman. Counseling committee — to guide and make welcome young graduates and co-operative students who are employed in this area. H. E. Harris'44 has been appointed counseling chairman. Social Committee — to plan an annual joint dance with neighboring alumni clubs, an annual picnic supper in the spring and to introduce new members at meetings. W. Masnik'44 has been appointed social cochairman. Civic Project Committee — to select and work with the Club on some

definite project of civic betterment. This project has not been definitely decided upon at this writing. Cochairmen are W. B. Rodemann'44 and E. S. Lawrence'47.

A new type of meeting was planned in October in that it was to be a served luncheon meeting at Ferro's in Schenectady. If the membership finds this to be acceptable, then future meetings will be planned in this manner. Present schedules call for seven noon luncheon meetings at the Y.W.C.A. from September to June with a dinner meeting in November, and in March. The June meeting will be outdoors and currently scheduled plans are for a picnic supper at Thatcher Park. Meetings are scheduled for the third Tuesday of each month. — EDWIN S. LAWRENCE'47, *Secretary*, Building 99, General Electric Company, 1 River Road, Schenectady 5, N.Y.

M.I.T. Club of Southern California

The two meetings at Kaiser Steel in Fontana were enjoyed by approximately 150 Alumni of whom 75 per cent brought their wives, or vice versa. Mal Naughten '23, safety engineer for Kaiser Steel, was master of ceremonies, assisted by Row'23 and Shoemaker'29. Mr. Senecke, head of public relations for the company, gave a history of steelmaking and also of the plant. In general, the plant impressed the Alumni as being capable of great production expansion inside the buildings newly erected; and the trip, which was taken after dark and included witnessing the rolling of red-hot bars, was very spectacular.

One of the best features of this trip was the presence of young people. Many members brought their entire families, such as McClure'22. Blonsky'25 and his wife brought three guests, while Alvin Markus'44 brought along, with his wife, his two brothers, Harold and Arnold, and their wives, and also an invitation for the Alumni to visit their plant. Others present at the inspection of the plant were: Batchelder'28, Beebe'10, Beilock'49, Bentley'08, Borland'17, Brown'43, Calvin'12, Carlton'25, Crane'17, Day'48, Fogliano'39, Golsan'12, Hopkins'06, Hutzler'40, Jenrick'39, Kallejian'16, Low'93, Lynes'49, MacCallum'24, Morgan'35, Morton'13, Navas'32, Osborn'36, Overturf'40, Ricker'42, Shelley'49, Shoemaker'29, Stodig'41, Stephens'18, Sully'16, Todd'47, Van Deusen'20, Welles'15, Wengert'10, White'33, Wiedeman'35, and Wilson'46.

On the 25th, Postal'25 acted as cashier in place of Treasurer Cunningham'27 who had left for commencement at Princeton. On the 24th, Beard'28 did a very fine job supervising the tickets for the family style chicken dinner — one of the high lights. Blitzer'46 and his wife, also Donnelly'29, helped register while Stanley'44 and Dingler'48 solicited help with the 1950 directory. The largest party present consisted of seven persons, brought by Row'23.

Among the letters received by Secretary Beebe'10 was one from Louise A. Fischer'31, saying: "I don't imagine you have many women members." Among

those present at Fontana was Pauline Glazier'46, and there are approximately 10 lady graduates of M.I.T. in the Los Angeles area, one of the most prominent being Constance Sammis'29.

The matter of placements is being helped by Collier'18, in addition to the good work of Stringfield'15. There has been an influx of a net of approximately 200 M.I.T. graduates since the 1946 directory was printed. The directory is proceeding satisfactorily with approximately 50 professional cards, gifts and display ads. It will take around 35 more to cover the cost; and when the cash is on hand, the contract will be let. There are many changes from the 1946 issue due to an increase of 20 per cent in the number of Alumni in this area and the change in street or city addresses. The Alumni Office in Cambridge sends the local secretary an average of 26 changes per month of which five are removals, seven new arrivals, and 16 changes of address. The mailing to the 1,138 club members for the Fontana trip in May had only 25 wrong addresses due to the previous work done by the Development Committee. Anyone knowing of a change of address of any alumnus should write to either the Alumni Office at the Institute or to Beebe here, as the 1950 directory should be accurate.

There are some symptoms also of a change in sending notices to "dead" Alumni. A "dead" Alumnus is one who is perhaps sleeping on his privileges. A live Alumnus is one who has paid his 1950 dues of \$2, which are to be sent to Beebe for transmission to Treasurer George Cunningham, he heard the wonderful address by President Killian in January, he took the very interesting trip through Fontana Steel, and he showed his appreciation of the training at M.I.T. by making a gift to the Development Fund. In Philadelphia, a notice is sent to all on the first of the year to send in dues. Those who reply are put on the mailing list for that year. In this area, the cost of sending a letter to the 1,200, more or less, Alumni is approximately \$80. There is serious consideration of using the Rochester plan of getting out a "News Letter" containing items regarding the meetings and also doings of the Alumni which will go to the active Alumni who have sent in their subscriptions of a dollar each with information for the directory and have shown interest in other ways. Alumni are urged to write to the Secretary at once as to their wishes.

Thanks are due Cleaveland'98 for his contacting many Alumni in his magazine work and furnishing late and more exact information on addresses. Stanley'44 and McDowell'45 have started a very good line-up of advertisers for the 1950 directory. The directory committee meetings at the home of Chairman Golsan'34 have been well attended by Morton'13, Row'23, Dingler'48, Cunningham'27, Navas'32, Doten'39 and others. Many more of the Alumni have been active during the past year and so we have advocated a regular monthly luncheon in downtown Los Angeles. This will be considered at the next meeting and Alumni are urged to bring in plans for a better club. — HIRAM E. BEEBE'10, *Secretary*, 1847 North Wilcox Avenue, Hollywood 28, Calif.

CLASS NOTES

• 1875 •

We are indebted to Arthur A. Blanchard '98 for the news appearing in this column and are very grateful for his sharing the following visit with us: "I think I should report to you on a visit we just paid to a very charming gentleman. We have been visiting friends in Holyoke, Mass., Dr. and Mrs. Howard Conant, and they, thinking we would have much in common, took us to visit William A. Prentiss at 1399 Northampton Street, in Holyoke. Mr. Prentiss is active, alert and enthusiastic and as interesting and charming a man as I would want to meet. He was president of the George W. Prentiss Wire Company, a business founded by his father. His son, George W. Prentiss, 2d, '05 is now in command of this business." Mr. Prentiss, who is now 96 years old, received his S.B. degree in Science and Literature from the Institute in 1875.

• 1886 •

The time has come to ask those members of the classes of '86, M.I.T. and S.M.A., united in the M.I.T. Alumni Association, who want to keep the year 1886 from going to — oblivion, let us say, to come to the rescue of the Secretary and send in something more or less substantial! There will be nine issues of *The Review* in 1950–51 to receive class notes and some 23 members of '86 whose names and addresses are in the Secretary's file to pay the expense of typing, postage and so forth. The "and so forth" includes the larger part of the expense which consists of the council meetings and the Secretary's expense for travel and possible night accommodations — the New Haven Railroad has not yet offered to run a special train to take him home after the meetings! The Association has sometimes been able to find a corner where he could be tucked in, but that cannot be depended upon. The probable expense will be \$5 or so per meeting without accommodations; this will run up to a total of about \$50 for the season. The Secretary expects to make his contribution with the rest and proposes to give twice the amount of the largest contributor. "I know what our mathematician, H. E. Clifford, will say to this offer. When I made the suggestion of raising a class fund by each member giving 10 per cent of his average income as shown by his last three Federal tax returns, he wrote: "Your suggestion, made some time ago, that the members of the Class of '86 contribute to the Technology Fund 10 per cent of their net income has led me to make some calculations. Let us suppose that my net income, after absolutely necessary expenses, is \$5,000. (You see I am complimenting myself.) If I give \$500 to the Fund that leaves me \$4,500 as net income. So really I should give \$450 to the Fund. But if I give \$450 to the Fund, my net income is \$4,050. Therefore what I should really give to the Fund is \$405. However, if I do this, my net income be-

comes \$3,645. Hence, what I should give to the Fund is \$364.50. If this calculation, resting as you will see on a sound foundation, is carried to a logical conclusion, it ends in the Fund's contributing to me rather than my giving to the Fund! I am sure the members of the Class must have the same idea, presumably after having gone through the same sort of calculation! Mathematics is a wonderful science, particularly that branch of it which deals with Infinite Series." Applying Clifford's reasoning in a reverse order, suppose the largest contributor sends \$5, then I should have to pay \$10. This would make \$10 the largest contribution, and I would be stuck with \$20. I haven't time to carry out the series, but I can see I am a hopeless bankrupt already! I know Clifford would not want this to happen, so to apply that other mathematical principle of finite limits I will place my contribution limit at \$10. I hope none of our legal friends will claim that I am using legal processes in an accounting problem and have me taken to court for infringing on their prerogatives.

On July 26, the Secretary went on a three-day automobile trip with Mrs. Chase and a friend to Petersham to see the beautiful exhibition in the Forestry Museum. We turned aside at Hubbardston to call on Henry P. Merriam, formerly of Lawrence, Mass., but for the past 15 years living with his cousin and her husband in a comfortable home in that town. Because he has to keep rather quiet, he received me seated in a big armchair surrounded by his own possessions in the part of the house he occupies. As we had not met for some 40 years, we looked at each other with considerable interest to see if we could find anything of the earlier days still lingering about us. As I remembered him he wore a beard, but now with only a moustache I could see nothing familiar about him, and he admitted he did not recognize me. However, we were both willing to admit that "we were us," and I had half an hour's pleasant chat with him, hearing about his doings (and undoings!) and telling him of my ins and outs. He came out to the car to meet Mrs. Chase with whom his cousin had been conversing, and to say his good-byes. He subscribes to *The Review* and looks forward to each issue, particularly to any mention of '86 men. I suppose it is unlikely that we shall ever meet again, although I hope to hear from him occasionally. — ARTHUR T. CHASE, *Secretary*, Post Office Box 4, Island Creek, Mass.

• 1890 •

The first M.I.T. class to graduate 100 students, 1890, also established a record as the first class to get together for a real 60th anniversary, which we celebrated on June 11 and 12, 1950, at the Copley Plaza and M.I.T. We were disappointed by the non-appearance of Du Pont, LeSueur and Whitney, who had planned to come, but 15, or 60 per cent of our 25 living graduates were present, and a total of 21. At the dinner on June 11 were: Sophia Hayden Bennett, Charlotte A. Bragg, Bartlett, Batchelder, Burley, Butters, Carlton, Clement, Crane, Crosby, Curtis, Flint, Greenlaw, Horton, Knight, Lenfest, Packard, Sherman, Stearns, Tilson and White.

All of these spoke briefly on what they had done during the past 50 years. Greetings, and some information as to activities, past and present, were received from Alden, Brown, Codman, Conger, Creden, Du Pont, Miss Howe, Howells, Hyde, LeSueur, Harry Noyes, Roberts, Ropes and Whitney. It is hoped that brief abstracts from all of the above may appear in future Reviews.

All of '90 will be especially happy over the announcement in the July Review of the fund given by Harry Goodwin's widow and son to establish two awards: (1) the Goodwin Medal in recognition of conspicuously effective teaching by a junior staff member, and (2) the Goodwin Premium to a graduate student doing conspicuously meritorious original research. The resolutions on Dr. Goodwin (adopted) by the Alumni Council referred to him as "a very successful teacher who did his work with enthusiasm and the deep belief in the dignity and importance of thorough instruction." Many of us have heard an undergraduate say of a junior instructor: "Oh, he knows his stuff all right, but he just talks to the blackboard." To the Secretary, ignorant of pedagogy, the first award sounds like a very unusual scheme to develop a group of teachers as outstanding as the winners of the Nobel prize. The Goodwin medallist will have the ambition, the enthusiasm, the verve, to fire his students with the urge to advance the knowledge of the world.

William Babcock Poland, another of our internationally distinguished classmates, who had won decorations from France, Belgium, and Poland, died in Washington, D.C., on June 26, 1950. Billy took a postgraduate course in sanitary engineering, but in June, 1892, was reported as superintendent of a two-million-dollar job at Point Judith Harbor of Refuge. Later that year, he became assistant engineer on one of the larger railroads and by 1899 was division superintendent on the Baltimore and Ohio. In 1906, he was with the Philippine Railway and in 1908 he became vice-president. In 1914, he was back in New York, but a year later was in France and London on Belgian relief work, and in 1917, when Hoover took over food control in the United States, he became director for Europe and was responsible for the feeding of 10,000,000 people. That September he wrote George Gilmore that it was "one long struggle to get food and ships to import 120,000 tons per month." The following is quoted from the *Washington Evening Star*: "Mr. Poland was a principal economic consultant for the Economic Defense Board and the Board of Economic Warfare in World War II. In 1926, at the invitation of the Shah, he organized the railway system for Persia. As director general of railways, he laid out the railroad line from the Caspian Sea to the Persian Gulf. Mr. Poland was first a United States rivers and harbors engineer. During his career he was also director general of railway and port construction in Yugoslavia; an adviser to the Ministry of Railways in China on reorganization of railway finance, and made a financial study and report of savings which could be expected from consolidation of all United States railroads into seven great

corporations. In recent years Mr. Poland had been a consulting engineer. Afflicted with a heart condition two years ago, he was forced to retire from work which had taken him to Europe, Russia, Asia, South America, Mexico, India, the Philippines and Persia. Surviving are his widow, Mrs. Dorothy Hofflin Poland, and a son, William Babcock Poland, Jr., of the Thirty-first Street address." The Class of '90 was represented at his funeral by John Crane. — GEORGE A. PACKARD, *Secretary*, 53 State Street, Boston 9, Mass. CHARLES W. SHERMAN, *Assistant Secretary*, 16 Myrtle Street, Belmont 78, Mass.

• 1891 •

Ernest Hersam's death was reported in the *Berkeley Gazette* of last June 24, which gives the following outline of his distinguished life: "Ernest Albion Hersam, professor of metallurgy emeritus at the University of California, died today at his home, 100 Arden Rd. The 82 year old Massachusetts Institute of Technology graduate died at 2:45 A.M. after an illness of seven days. Hersam came to the Berkeley campus of the University in 1892. He joined the mining department and in 1923 was appointed professor of metallurgy. The professor graduated from MIT in 1891 with the degree of SB. He wrote numerous papers for American professional journals and belonged to many societies and honorary fraternities. Among them were the American Assn. of Advancement of Science, Society of Chemical Industry, Mining and Metallurgy Society of America, Sigma Xi, American Institute of Mining and Metallurgical Engineering, American Mining Congress and Franklin Institute. He was the husband of the late Ida Louise Downing Hersam. His survivors include a niece, Mrs. Norman Hersam of Berkeley. Inurnment will be held at Stoneham, Mass., his birthplace." Harry Young will try to get copies of some of his writings on scientific subjects for the files in the new library building, and suggests that other members of our Class send to him copies of some of their own writings or those of other members for the same purpose.

Our annual dinner was held on June 10 at The Country Club, Brookline, as usual through the courtesy of our President, Harry Young. Only seven members attended and 22 sent cards of regrets. The dinner was an afternoon affair instead of evening as heretofore, as some of our young men (all over 80) don't like driving home in the dark. Present at the dinner were Brown, Cole, Damon, Dana, Carl Hatch, Howard, Read, Wilder and Young.

Harry Young reported Alumni Fund contributions from '91 as follows: For 1950 from 32 members, \$584.83. For the 10-year period 1940 to 1950, \$6,511.33. From future bequests by tax-free legacies,?

Your Secretary made a call on Walter Douglass at his little farm in Dunstable, Mass., and found him out working just like any other farmer, looking well and happy. His work on rainy days is now making stainless steel weather vanes, instead of his old hobby of miniature furniture. Howard Forbes, after eight years of

confinement to his bed and chair from a paralytic stroke, is in a surprisingly pleasant state of mind, interested in what is going on in the world and particularly concerning the great Class of '91. He still wears the pleasant smile we all remember and sends greetings and best wishes to all his old classmates.

Gorham Dana is still very busy as chairman of the Brookline Planning Board, trying to find a high-speed route across his town, free from too many objections, and to solve the almost insolvable automobile parking problem. As this is being written, we are sorry to hear that his wife just died after a long illness. Further communications from Robert Ball are, as usual, full of interest. One to Arthur Hatch made mention of a trip to England which Hatch and Billy Palmer made in 1891. They carried a letter of introduction from Ball, at that time connected with a Chicago business, to his father, Sir Robert Ball, Astronomer Royal to Dublin and later to England. They were entertained most pleasantly, which was one of the high spots of their trip. Another letter to Gorham Dana reports on "Socialism at work with no will to work." He suggests that but for "the incidence" of age, he, too, would probably be experiencing that same all around lack of incentive. He cites a case of an author who received £42,000 in royalties; but had only £3,000 left after paying £39,000 in taxes. He also reports that it takes two years to buy an automobile, owing to export shipments to get American dollars.

The beautiful six-foot diameter globe, a gift to M.I.T. by our President, Harry Young, has been installed in the Geography Room of the Charles Hayden Memorial Library. It makes a very interesting and useful piece of equipment, and '91 may well be proud of our President's good taste and generosity. — FRANK W. HOWARD, *Secretary*, Bemis Associates, Inc., Post Office Box 147, Watertown 72, Mass.

• 1892 •

It is the sad duty of the Secretary to report the deaths of two classmates during recent months. Our president, George Hunt Ingraham, died on June 29, 1950, at his home, Ridge Road, Marblehead, after a brief illness. The Secretary is indebted to the *Lynn Item* for the following account of his life activities: "Son of the late Andrew and Eva Ingraham, his father formerly served as headmaster at Friends Academy, New Bedford. The architect attended the school as a youth. He graduated from . . . Technology in 1892 and later studied art in London and Paris.

"Returning to this country, he opened his architect's office in Boston where he remained from 1893 until 1918. For the next 20 years he conducted his business in Cleveland and Detroit. In 1928, Mr. Ingraham won first prize in a contest to design a public square for the city of Cleveland, Ohio, and the present Cleveland Terminal Tower, his prize winning effort, is considered one of the most beautiful municipal sites in the country."

In 1940 he retired from business and came to Marblehead to devote more time to his life-long hobby of painting, taking up water color and marine painting. His works include landscapes from France,

Spain, North Africa, England, Bermuda, New England, and the Northwest. In 1941, he built the house on Ridge Road where he and Mrs. Ingraham entertained our Class on the occasion of its 55th anniversary. In recent years Ingraham was extremely active and designed many housing projects for veterans of World War II. He also designed the Ethel Blanchard Collvers art studio in Marblehead.

He was a member of the Cleveland chapter of the American Institute of Architects, Marblehead Unitarian Church, the Layman's League and the Corinthian Yacht Club. Besides his wife, Mrs. Esther (Price) Ingraham, he leaves three daughters, Mrs. Carl B. Graves of Auburndale, Mrs. Lawrence Jones of Beverly, and Mrs. Otto Kuhler of South Hadley; and eight grandchildren. Carlson, Ober, and the Secretary represented the Class at his funeral on July 1, at the Unitarian Church, Marblehead.

Charles Alston Beal, who graduated with us in Course VI, died on July 18 at the Mountainside Hospital, Montclair, N.J., after a lingering illness. Born in Abington, Mass., the son of George A. and Patricia (Reed) Beal, his early education was obtained in the Abington schools. Soon after graduation from M.I.T., he began his career at the General Electric Company's plant in Lynn and was there until transferred in 1896 to the company's Lamp Works in Harrison, N.J. The Secretary is indebted to the *Newark News* for the following account of his career since then: "He moved to Montclair in 1910 and served as lamp consultant for the company from 1914 to 1929, making several trips abroad. He went to Japan to work with the Tokyo Electric Company, and later to Shanghai where, as a result of a survey he made there in 1916, the China General Electric Company was organized and a plant established there in 1917.

"Mr. Beal also went to Rio de Janeiro where he served as advisor concerning manufacturing methods and equipment for the Fabrica Mazda Lamp Factory, a General Electric manufacturing company there. He also went to Italy and helped organize the company's lamp factory at Milan in 1929. In 1917 Mr. Beal was made manager of the engineering department at the Edison works in Harrison and continued in that position until he went with the International General Electric in 1926. He retired in July 1932, as advisor on all lamp manufacturing activities. Mr. Beal leaves a daughter, Miss Dorothy Beal of Montclair."

On Alumni Day last June, Carlson and Burnham and the Secretary were present at the luncheon, and Carlson and the Secretary represented the Class at the banquet in the evening.

Those of us who are members of the Appalachian Club have read with a great deal of interest Fred Maynard's article in the June, 1950, number of *Appalachia* entitled "Skyline Fireworks." In this article he gives a very interesting account of his activities in connection with the dedication of the New Summit House on August 21, 1915, and the illumination of the peaks in the Presidential Range which he personally planned and carried through

as a part of the dedication exercises. On account of fog and rain storm setting in soon after dark the mountain illumination that year was not a success, and the following year, in response to requests of the officials in charge of the hotel, Maynard planned and carried through a very successful illumination of the White Mountain peaks on the night of September 3, 1916. This illumination was seen in Portland, Mt. Katahdin in Maine, the Green Mountains in Vermont, and the Adirondacks in New York.

Fred Maynard has for his entire lifetime been a lover of the White Mountains and an enthusiastic supporter of the activities of the Appalachian Mountain Club and other organizations interested in the development of this area, as will be evident from the following quotation from the editors of *Appalachia*: "Fred B. Maynard, the third generation of a family of coffee merchants, has long made the White Mountains his hobby, and first climbed the northern peaks in the early 'eighties at the age of fourteen, years before there were any trails in that region. Later with J. Rayner Edmonds he helped construct the Gulfside Trail building many cairns which today still mark the path. A veteran of thirty winter ascents of Mt. Washington and long a prominent figure in White Mountain activities, he will next year round out his fiftieth year as Club member."

Sumner B. Ely is still going strong as superintendent, Bureau of Smoke Prevention, Pittsburgh, Pa. He writes an interesting article in the June, 1950, number of *Mechanical Engineering* on "Locomotives and Smoke in Pittsburgh." Due to the regulations of his organization which he states are as strict as in any city in the United States, in 175,345 observations of locomotives taken in 1948, violations were only .204 per cent, or at the rate of 21 violations in 10,000. The nearest record to this in any other city was 160 violations in 10,000 observations. In spite of this, there are still complaints on smoke nuisance from locomotives, and Ely admits that "wherever there are coal-burning locomotives there is bound to be smoke," but the increase in Diesels is helping to solve the problem to a great extent. He also has great hopes for the gas turbine locomotive. May he continue for a long time to come in his good work.

The Secretary hears occasionally from Charles Chase, John Hall, Doc Worthington, Burnham, Ober, and quite frequently from Carlson, and is glad to report that all are still well and enjoying life, barring some disabilities due to age. Would like to hear from more of you. — CHARLES E. FULLER, *Secretary*, Box 144, Wellesley 81, Mass.

• 1893 •

The 57th anniversary meeting of the Class was held on Monday, June 12, at the Engineers Club, 96 Beacon Street, Boston. Members present included Baxter, Biscoe, Blair, Buchanan, Glidden, Keyes, Lamb, Latham, Leeds, Ed Page, E. S. Page, Pevear, Spofford, Taylor and Tomfohrde. Bert Dawes made the preliminary arrangements for the meeting but was unable to be present on account of

serious illness which culminated in his death on August 14. It was the only local meeting of the Class he had failed to attend since graduation, and it is needless to comment on the extent to which his genial personality and friendly greetings were missed at this gathering of '93 men who have held together locally over a period of 57 years. At the business meeting immediately following the luncheon, all of the class officers were unanimously re-elected for the ensuing year as follows: Herbert N. Dawes, President; Leonard B. Buchanan, First Vice-president; Jesse B. Baxter, Second Vice-president; Charles M. Spofford, Treasurer; George B. Glidden, Assistant Treasurer and Assistant Secretary; and Frederic H. Keyes, Secretary.

The following notice which appeared in the Boston papers on August 15 shows the extent of Dawes' business activities and social connections: "... Herbert Nathan Dawes, 78, a consulting engineer for the Ehret Magnesia Mfg. Co. of Valley Forge, Pa., ... died yesterday at his home, Washington street, Brookline. Born in Hudson, he was a graduate of ... Technology with the Class of 1893. After his graduation he worked for the Fitchburg Railway and the Massachusetts Highway Commission.

"In 1902 he joined the firm of Nightingale and Childs, insulation manufacturers, and became president of the firm in 1919. At the same time he was also president of the Putnam-Morrill Company, manufacturers of aprons, and a grower of grapefruit and pineapples in Puerto Rico. From 1927 to 1932, Mr. Dawes was president and general manager of the Investment Trust Securities Corp., and in 1934 he joined the Ehret Magnesia Mfg. Co. as consultant.

"He was a life member of the Engineer's Club of Boston; a member of the Appalachian Mountain Club of Boston, the American Society of Mechanical Engineers, the Winchester Country Club, the Boston Chamber of Commerce; the Exchange Club, Boston; the Engineer's Club of New York, the Tedesco Country Club, and the M.I.T. Alumni Council. He leaves his wife, Mrs. Clare (Langan) Dawes, and two stepchildren, Mrs. Laurence H. Matthews of Pelham Manor, N.Y., and John F. Langan of White Plains, N.Y." Much more complete accounts of his lifework and experiences are recorded, to a considerable extent in his own words, in our class books published at the time of our 30th and 50th anniversaries.

Henry W. Nichols, a member of our Class who graduated from the Course in Geology, died on June 11 in South Shore Hospital, Chicago, Ill. He had been connected with the Field Museum of Natural History in Chicago for 50 years when he retired in 1944. During this time, he made numerous geological expeditions for the museum, including visits to South America and Canada. He was most fortunate in escaping from the great fire in Porcupine, Canada, where hundreds were killed. As chief curator of the museum, he was in charge of the world's largest collection of meteorites, assembled by the late Oliver C. Farrington. He is survived by his wife, the former Anna L. Giles, whom

he married in 1895, and a sister, Miss Carrie Nichols.

Walter Edwin Noble died in Fall River, Mass., on September 11. A native of Newton Center, he graduated from the Newton high school in 1889 and was associated with our Class in Course I during the sophomore year. He was employed by Rice and Evans in Boston, and the Metropolitan Water and Sewer Commission until 1898 when he joined the Fall River public works department. In 1913 he was appointed assistant city engineer, and from 1931 until his retirement in 1940, he was deputy city engineer of Fall River. During World War I, he had served as associate legal advisor in the provost marshal's office. He was a member of the Society of American Military Engineers, the American Society of Civil Engineers and the Boston Society of Civil Engineers. He is survived by his wife, the former Mary Frances Gifford, whom he married in April, 1910. — FREDERIC H. KEYES, *Secretary*, Room 5-213, M.I.T., Cambridge 39, Mass. GEORGE B. GLIDDEN, *Assistant Secretary*, 38 Chauncey Street, Boston 11, Mass.

• 1894 •

The summer has come and gone and there has been no harvest of class news of unusual character. It is again a sad duty to report further losses in our rapidly declining members, and two deaths of classmates occurred in August.

Richard Gustavas Dukes, Dean Emeritus of the graduate school at Purdue University, was killed in an automobile accident near Alton, Ill., on August 12. Although the Class has not a strong claim on this man of distinction, he was associated with us for at least a year as a student in the department of general studies and in Mechanical Engineering. Dukes was born in Findlay, Ohio, on November 10, 1871. He first attended De Pauw University at Greencastle, Ind., then came to Technology and was with our Class during its second year, 1891-1892, after which he transferred to Cornell where he graduated in mechanical and electrical engineering in 1896. He was with the General Electric Company at Schenectady, 1898-1900; instructor in mechanical engineering at Worcester Polytechnic Institute, 1900-1901; instructor in the department of experimental engineering at Cornell, 1901-1903. In the latter year, he became professor of applied mechanics at the Case School of Applied Science at Cleveland (now Case Institute of Technology) where he remained for six years. He then became professor of applied mechanics and head of the department at Purdue University, and was dean of the graduate school from 1929 until his retirement. He leaves a widow and two daughters.

The death of Harry P. Hastings of Framingham occurred on August 25. He graduated with our Class in the Course in Civil Engineering. His father, who had long operated an excellent clothing store in Framingham, died just as Harry had completed his course, and circumstances forced him to carry on the family business which he did for 56 years. A man of delightful personality and estimable quali-

ties, he was active in affairs in the town. He was prominent as a church soloist, an active member of Alpha Lodge of the Masons, and a charter member of the Framingham Chamber of Commerce. It was unfortunate for his classmates that it never seemed possible for him to attend the reunions of the Class, but all who knew him will well remember his friendliness and quiet charm. Hastings was a native of Boston but practically all his life was spent in the town where he was so highly regarded throughout his business career. He left three sons, Philip M., of Baltimore; Cedric M. and Julian P., both of Framingham; and six grandchildren.

The Secretary has within the past month survived the process of moving from the home occupied for 30 years into a small apartment. Being a family of collectors, the job has been monumental. Fortunately, much of the furniture, rugs, china, silver and articles for beautification could be passed on to the next generation. Despite this, the conviction is established that a move from a commodious house after 30 years is as troublesome as three fires would have been, thus reversing the well-known adage. — SAMUEL C. PRESCOTT, *Secretary*, Room 5-213, M.I.T., Cambridge 39, Mass.

• 1895 •

We held our 55th reunion at the Technology Luncheon on Alumni Day last June, but it was rather a confused affair. Notices to our mates clearly stated we would have a table at the luncheon, and your Secretary was the first to enter the grounds when entry was permitted, and established his headquarters. Mrs. Alden and Eddie, Mrs. Yoder and L. K. were the first to assemble; selected a table with the usual comfortable umbrella, and marked same with a large sign — 1895. Parker Kemble from Marblehead was next on the scene, then came Lieutenant Colonel Percival M. Churchill from Elmwood, Mass. Both these lads found our headquarters, adjacent the tables '50 and '60. We waited, ate, talked of the old and the new things of life and had a most pleasant gathering. Kemble's appearance was his first at any of the five-year reunions. Now another session was held amidst the gathering by Harold K. Barrows, Winthrop D. Parker, Frederick L. Richards, and Edward A. Tucker. These lads failed, for some reasons or other, to find the official headquarters. It is a question whether or not these gents had their glasses on when they entered the grounds, or whether they were so engrossed in themselves to forget to hunt for the 1895 sign. We expect to get a letter of explanation from these lads, and when we do we will accordingly report the findings in some later issue of *The Review*.

The banquet at the Copley Plaza was staged as usual with Alden, Hunt, and Yoder attending. Haffenreffer was there among the "boiled shirt" row and looked as genial and handsome as ever. Andy Fuller had a previous engagement and could not attend the banquet, but extended the gracious courtesy of a call at the Copley Plaza prior to the banquet. Andy looks as young as ever. Dickerman of Charlottesville, Va., had planned his

New England trip to fit with the reunion time, but conditions at home changed his plans. George F. Shepard wrote his approval but unfortunately could not attend. Lat Ballou still resides in Woonsocket, R.I., but his business responsibilities prevented attendance. However, he sends his best regards to all. Charlie Adams, Course VI, hopes we will keep our reunion enthusiasm bright to illuminate our 60th reunion. It was good to hear from John Dyer of Albany, N.Y., who recalls being with our Class in his sophomore year, after one year with '94. Having been retired some 18 years, he still retains his good health but misses seeing Technology men, yet stresses the "never to be forgotten days" at the Institute. Joe Walworth of Andover, Mass., was in Michigan at the time of the reunion with his son and their family, and sends his best regards to all. Louis A. Abbot of Boothbay Harbor, Maine, regretted his inability to attend on account of family illness. He was with us at the 50th and now looks forward to the 60th reunion. Lastly, we have heard from Tommy Lothrop, who is ever busy making factory and office equipment in Chicago. We have not seen him for many years since his large family and business have kept him occupied, yet he promises to be on hand at our next five-year gathering.

We are fortunate to place in our archives the original postal mailed from New Delhi, India, by Gerard Swope to Dr. Compton, under date of March 8, 1950, reporting on a most enthusiastic meeting of Technology Alumni. We have *The Review* to thank for this valued souvenir, and prize it highly. Bob Farquhar has moved from Pasadena to 2930 Avalon avenue, Berkeley 5, Calif. When writing Walter D. Bliss use the address of 2990 Vallejo Street, San Francisco 23, Calif.

Regretfully, we report the passing of William Horace Quiner (1891–1893, IV) of Marblehead, Mass., on June 3, 1950. Quiner was with 1895 for two years to get his fundamentals in architecture. After leaving Technology he was in the offices of Charles Brigham, during the construction of the Massachusetts State House; H. Langford Warren, of Harvard faculty; Dwight and Chandler; and Little and Brown. Prior to engaging in independent practice, he served 12 years with Shepley, Rutan and Coolidge, during which time this firm constructed the Harvard Medical School, Brigham Hospital, Boston Y.M.C.A. and other noted buildings. In 1912 he entered partnership with William H. Peare as the firm of Peare and Quiner. Later, Charles K. B. Nevin '96 and George W. Chickering '91 joined the organization as the firm of Peare, Quiner, Chickering, and Nevin, with offices at 6 Beacon Street, Boston. The report of his passing came to us through the Alumni Office.

We received an enjoyable and refreshing letter from our mate in New Orleans, Allison Owen. He writes: "Just now I am busy with a housing project, an enlargement of one that I did 10 years ago. New Orleans is thriving and has an unusually large amount of building and it is developing the Latin-American field very profitably. I spent last summer in Europe, my first visit since World War I, when I

commanded a regiment of Field Artillery in France. I was impressed with the evidence of returning activity; I saw less war damage than I had anticipated; the larger cities were freshly painted and clean; and the road beds of the railways were astonishingly smooth and all trains electrified. An old doorman at the Sweitzerhoff told me he had been with the hotel for 40 years, and I surprised him by stating I had been a guest 60 years ago." Had a letter from George Cutter recently from Dedham, Mass. He states he is still hanging on, growing somewhat older, but tremendously interested in what is going on. George has been a good skipper in his time, and understands that wind gives pep to one's sails. Mates, take a pencil and paper and drop your Secretary a line. He will guard all secrets, so get busy! — LUTHER K. YODER, *Secretary*, 69 Pleasant Street, Ayer, Mass.

• 1896 •

With the vacation season well spent, we hope, we return to our fall and winter activities, refreshed and with courage to go forward. We will all profit in the months ahead if we will let "George" do some of our chores, and remember to divide the day's activities with periods of relaxation, and permit our schedules to properly digest. Questionnaire Attention! Our 55th anniversary will be celebrated this coming June. We should immediately make plans as to where we will convene, when, and for how long. Your secretaries are involved in a situation which seems to indicate that some members of the Class who have attended our reunions at East Bay Lodge might like to make a change. It occurs to us that our length of stay in '51 might be curtailed perhaps a whole day. If a majority would prefer to have our annual dinner in a Boston hotel and omit the outing entirely, plans for such a change of program should be started promptly. On the other hand, if we go to our former reunion headquarters for less than three days we should plan for this change of the reunion immediately. We may think it wise to send this questionnaire through the mail in addition to its appearing in the class notes. In any event, please reply to the above immediately.

Our Class has supplied a number of distinguished scientists through the first half of the 20th Century. Several have been outstanding. Among these is our Paul Litchfield. His career, which started at nine dollars a week, has been concentrated in the development of the rubber industry in this country. He has just passed his 50th year of consecutive service in this company and at 75 he still maintains an active interest in its welfare. We are all familiar with this great rubber industry in which he has dominated the field, both as a creative genius and a managerial expert. We will not attempt to chronicle these outstanding milestones in the rubber world but will concentrate our observations on his remarkable humanitarian gifts. Like other great men, much of his philanthropy and "personal relation" activities has been created without fanfare or public demonstrations. There have been many biographical sketches

focusing our attention to these personal traits which he so modestly acknowledges.

We quote the following comments from the Akron *Beacon Journal*: "There is much that is revealing of Mr. Litchfield's character and philosophy in the book, 'Autumn Leaves' which he wrote five years ago. . . ." The newspaper goes on to "consider some of the highlights of his career: "The production manager of a company that grew by leaps and bounds in the first two decades of this century, while many other rubber firms started and died; a leader in one of the first programs for employee welfare and representation ever adopted by a large company; in the forefront in recognizing the possibilities of air transportation; an executive during the trying days of the depression and the rise of the labor unions; still the top executive as his firm expanded tremendously and took on many new assignments in war production; world traveler; patron of the Boy Scouts; recipient of honors from church and brotherhood organizations for sponsoring the unusual radio program, 'The Greatest Story Ever Told,' based on the teachings of Christ. . . . The success he has achieved has been not only for himself but for this community, the Goodyear company and its thousands of employees and, in varying degrees, for millions of persons who have profitably used the company's products. . . . The greatest thing he was ever given, Litchfield said, was the opportunity to direct the production of the then small Goodyear plant. That came exactly 50 years ago today. And one of the greatest pleasures he has had in the half century was to provide similar opportunities for others. 'Opportunity is the greatest thing anyone can give to the people in an organization.' That is the belief of Paul W. Litchfield as he looks back on his 50 years with Goodyear Tire & Rubber Co." How can there be such great differences between capital and labor when men like our Paul Litchfield create and maintain benefits which are purely unselfish and with one objective in view, "Peace and Harmony" in this world of ours?

Fred Damon and his party, and John and Mrs. Rockwell motored 280 miles to Jackman, Maine, on June 2 for the spring fishing on Holeb Lake. Poor fishing, but a beautiful spot. En route we saluted Ben Hurd, buried at Newburyport, and "Our Charlie" at Rye, both going and coming. Sad but happy memories.

The Alumni Banquet at the Copley Plaza on June 12 was attended by: Fred Damon, Bob Davis, Henry Grush, Perry Howard, E. C. Jacobs, Paul Litchfield, Conrad Young and John Rockwell. See the July Review for proceedings. Joe Harrington's son came over to our table and gave his father's greetings. Fine chap, and we were delighted to accept this excellent substitute for Joe. The fellows present seemed in great spirits and they are so well known that even a thumbnail sketch seems unnecessary. An informal vote was taken regarding the return to East Bay Lodge next year for our 55th. All present wished to return there.

We called up Partridge before going to the dinner, as well as Ralph Henry. The former is very much of an invalid, but

was bright and cheerful in spite of his infirmities. Ralph Henry reported that he was getting in town several times a week but was not too active. We missed Jim Driscoll at the dinner, so a telephone check-up reported him as feeling well except for a temporary indisposition which curbed his desires to be with us. Robbie called up to say hello, as he was going to Maine for the summer. Fred Damon had a long talk with him.

We received notice of the death of Arthur F. Woodsum, 737 Islington Street, Portsmouth, N.H., on July 9, 1950. — JOHN A. ROCKWELL, *Secretary*, 24 Garden Street, Cambridge 38, Mass. FREDERICK W. DAMON, *Assistant Secretary*, 275 Broadway, Arlington, Mass.

• 1897 •

Alumni Day on June 12, marking the 75th anniversary of the Alumni Association, had but a very small representation of '97 men present. At the luncheon in Du Pont Court were Mr. and Mrs. Henry E. Worcester, Mr. and Mrs. George R. Wadleigh, John P. Ilsley, Luzerne S. Cowles and your Secretary. At the banquet at the Copley Plaza Hotel in the evening were Worcester, Wadleigh, Humphreys and your Secretary. Mrs. Worcester and Mrs. Wadleigh attended the ladies' banquet.

Your Secretary has received a letter from Frederick C. Gilbert, V, who was with '97 for three years, taking his degree, however, with '98. In the course of his letter he writes: "You fellows who live in New England are certainly helpful in keeping your widely flung classmates informed. I have been so far 'out West' so many years that it is only occasionally that I can get back to Boston. I see a few M.I.T. men out here occasionally. I am about ready to retire, but this war business may change some of my plans. Please remember me, if you think of it, to any of the '97 men you run across, especially Course V men." Fred is listed as supervisor, Industrial Services, Unemployment Compensation Commission of Montana. His address is 1020 Ninth Avenue, Helena, Mont.

We are very pleased to quote the following paragraphs from the Brookline, Mass., *Citizen* of June 8: "Ending nearly forty years in municipal service, Walter Humphreys recently resigned as a member of the Library Trustees. Elected a library trustee in 1916, Mr. Humphreys was secretary of the board until 1938 and its chairman from 1941 to 1946. He also was a member of the School Committee twelve years and served as chairman of the board from 1916 until resigning in 1925, when he was presented a gavel and block made by boys of the Lincoln School with pieces of wood from each of the local school buildings. After receiving a bachelor of science degree in mechanical engineering from . . . Technology in 1897, Mr. Humphreys was associated with various engineering concerns until 1899. He was registrar of Technology from 1902 to 1922 and an associate professor on the faculty from 1920 to 1922. He served as secretary-treasurer of the M.I.T. Alumni Association from 1906 to 1923 and was alumni term member of the corporation

from 1923 to 1928 and has since been a life member and secretary of the corporation. Mr. Humphreys has been secretary and treasurer of the National Association of Wool Manufacturers and editor of its bulletin since 1922, and was treasurer of the Associated Wool Industries from 1935 to 1939 and secretary of the Code Authority of the Wool Textile Industry in 1934 and 1935. He has been a director and secretary of the Harvard Cooperative Society since 1918 and is a former president of the American Association of Collegiate Registrars and the University Club of Boston. He is a member of the Brookline Historical Society and the Brookline Thursday Club, and also belongs to the American Newcomen Society, Delta Kappa Epsilon Fraternity, the Faculty Club and the Down Town Club of Boston." After reading this very complete listing of Walter's activities since he graduated, we are tempted to ask him what he finds to do in all of the spare time which he must have on his hands.

William S. Rhodes, XII, died at his home in Roslindale, Mass., on August 13, 1950. He was a retired civilian engineer for the United States Army and traveled extensively on Army assignments. He was a member of the Society of American Military Engineers. He leaves one sister. — Daniel P. Abercrombie, V, an investment banker, died at Manomet, Mass., on July 12, 1950, aged 75 years. After leaving the Institute, he became an engineer and contractor, and worked in railway operation and management. At one time he was chairman of the board of the Wolverine Power Company. From 1925 until 1939, he was associated with E. H. Rollins and Sons, investment bankers of Boston, later joining F. L. Putnam and Company, Inc. He leaves a widow, one son and one daughter.

Mr. and Mrs. Percy M. Smith of Toronto, Canada, celebrated their golden wedding on August 1 at Chappaquiddick, Mass., where they had been summer residents for many years. Percy was a boyhood resident of Rockland, Mass. A graduate of Course II, he is now consulting director of the Bell Thread Company of Hamilton, Ontario, Canada. The Class extends its hearty congratulations to Mr. and Mrs. Smith on their anniversary. — JOHN A. COLLINS, JR., *Secretary*, 20 Quincy Street, Lawrence, Mass.

• 1898 •

Through the courtesy of George Treat, the '98 get-together on Alumni Day, June 12, 1950, was held at the Algonquin Club. At a class meeting during the get-together, President Van Lansingh presided and in the absence of the Secretary who was indisposed, Vice-president Edgerly pinch-hit as secretary. Dan has sent us the following interesting, concise and comprehensive minutes of the meeting.

"1. Fifteen members present. Elliott Barker, Arthur Blanchard, George Cottle, Fred Dawes, Dan Edgerly, Dave Fenner, Carl High, Van Lansingh, Mrs. Eva Crane Morrill, Frank Perry, Joe Riley, Ernest Russ, M. De Kay Thompson, George Treat, Paul Wesson. 2. Dean George Harrison was present at this our first meeting

since his election as an honorary member of the Class of 1898. He was presented with (a) alumni badge as a member of the Class of 1898, (b) a copy of our 50th-year reunion book, (c) a directory of the Class of 1898 in which his name is listed as a member. Dean Harrison replied in an extremely gracious and interesting speech. 3. Dan Edgerly presented some data on class statistics. (a) As of June 1, 1950, there were 162 listed members of which 99 were graduated in 1898. This latter is 50 per cent of the original 198. (b) During the past two years the President has issued four letters, and the Secretary has had notes in 12 out of the 18 issues of *The Review*, totaling 12 full pages (36 columns) with approximately 65 different classmates mentioned. 4. Moved, seconded and passed a vote of appreciation to President Lansingh for his interest and objective work in class affairs. 5. Moved, seconded and passed a vote of sincere thanks to Secretary Chapin for his splendid secretarial work especially so for the extraordinarily interesting class notes over the past two years. These notes are a big factor in continuing the class spirit developed at our 50th reunion. There was also expressed our regrets that Ed Chapin could not be with us at this class meeting and thus have the pleasure of introducing Dean Harrison as our first honorary member. 6. President Lansingh announced his resignation as president. This resignation was accepted with regret. 7. George Cottle moved, with a second by Ernest Russ, that Lester D. Gardner be elected president. This was passed unanimously. 8. Moved, seconded, and passed that the Advisory Committee be authorized to decide and put into operation any matter not handled at a class meeting. 9. George Cottle, on request, gave an interesting survey of his recent European and Asiatic trip with special comments on the people and the present state of the countries visited. 10. Adjourned."

Dan continues: "At the Alumni Banquet in the evening there were present Barker, Blanchard, Dawes, Edgerly, Fenner, High, Lansingh, Perry, Wesson, also, Dean Harrison, who enjoyed and appreciated being an alumni member of the Class of 1898." Thanks, Van, Dan, and George Treat, for everything. Some organization, this Class of '98, which functions smoothly in every emergency!

Lester, when informed of his election as president of the Class, felt that he could not accept the honor on account of the state of his health. The latest information on this score comes from George Cottle and we quote in part from his letter of July 24. "Saturday I went up to see Lester (at Shoreedge, Lake Sunapee, N.H., where Lester spent the month of July). He is greatly improved, has gained 20 pounds and looks very rested. The arm, or rather the hand, is still bothering him. It proved to be the nerves in the hand and wrist, but physical therapy exercises have aided greatly, although it may be six months before he can use it completely. Anyway, they are both greatly encouraged." We can readily understand why Lester would not accept the presidency, as he throws his whole self into any task which he undertakes.

We might say that he did 50 years' work in one as chairman of the 50th.

The class meeting of June empowered the Advisory Committee to act for the Class between class meetings. Accordingly, President Van Lansingh canvassed the Advisory Committee and Dan Edgerly was elected president. Dan, as everyone knows, has worked a stroke oar in class affairs before, during, and since the 50th. All stand up and sing: Hail to the Chief!

And, in passing, we wish to pay our tribute to the tireless energy and deep interest of the retiring president in the welfare of '98 and M.I.T.

The Secretary appreciates the kind motion of the class meeting and other kind messages and inquiries. He recovered quickly to normal vigor whereof the following is an indication. He attended, during the summer, the annual outing of the Drysalters' Club of New England, played 18 holes of golf and won the low net prize for his class. The Drysalters' Club of New England is an historic social-trade organization of the chemical and dye trade of New England, of which organization, your Secretary has been secretary-treasurer for the past four years. Lester was the principal speaker at its annual meeting two years ago on his favorite subject of aeronautics. George Cottle and the Secretary were also at the head table, so that one of the members remarked, "It looks like a reunion of the Class of '98, M.I.T."

Speaking of golf, reminds us of a zealous golfer, our classmate, Arthur Blanchard. You will be concerned to learn that Arthur suffered a paralytic stroke in early September. At the present writing, September 16, he is in the hospital, gradually recovering. He is expected home in a week or so and the plan is for him to go south as usual in the late fall to his favorite Hotel Lake Alfred, Lake Alfred, Fla. He would assuredly appreciate a letter or a card from his classmates. It is hardly necessary to add that quietly and unostentatiously but faithfully Arthur served the Class as secretary for 25 years, during which time he was back of several reunions and assisted in the preparation of numerous class books.

Paul Wesson was in town the week before Alumni Day; telephoned, and we had lunch together. Paul, since his retirement from the Eastman Kodak Company, has taken up the playing of the violin. As a boy, Paul played on the violin but gave it up during his business career. He remarked, "I did not have any teacher as a boy. Now from my teacher, I have found out that everything I did was wrong." Paul also has another occupation—Christian Science practitioner, having taken over his late wife's practice. He served on the Rochester regional committee of the Financing Development Committee, and was quite pleased with the subscriptions he was able to secure for the Fund. Here is an idea from Paul that we pass on to the Class. Mrs. Wesson, who with Paul attended the 50th, has since passed on. It so happens that Paul and his daughter, Mary, who is secretary to the President of Rochester University, had no satisfactory picture of the wife and mother. So they hit on the idea of an enlargement from one of the pictures of the

50th. Let the following letter from Mary tell the story:

"Father has asked me to send you the statement made by Harry Selig of Fay Photo Service, Inc., 43 West Canton Street, Boston, in his letter of February 23, 1949, to him concerning the cost of making a separate photograph of mother from the large group picture taken at Babson's at the time of your 50th reunion. Mr. Selig wrote: 'Art work and having background removed will be approximately \$20. Prints after that will be \$1.50 each.' He sent a 'proof of a head which we want to know is the right one before we go ahead on the order,' so that there could be no mistake about the one we wanted reproduced. The Service did an excellent piece of work and we are delighted with the results." Thanks, Paul and Mary, for a very novel and good idea.

Dave Fenner has retired and his present address is 228 Elm Road, Falmouth, Mass. Dave asked the Falmouth *Enterprise* to send us a copy of their Mail Away Edition of May 26. In it is an account of the career of our classmate. This is so good that we are keeping it for later class notes, when there will be space to publish it in its entirety. Thanks, Dave.

Clarence Goldsmith writes that he is retiring, having reached the age of 76. His new address is 60 Elm Street, Andover, Mass. Now that you are a near neighbor, we hope to see more of you, Clarence.

Speaking about retiring, we wonder what effect the remobilization program will have on the activity of the old war horses of '98. If you are called back into harness, good luck to you and be sure to write us about it.

In regards to retirement, the Secretary had figured this year gradually to retire or reduce business activity, but the remobilization program has changed all this. As a result, it is going to be difficult to find the time, let alone the energy, necessary to carry on as class secretary. So if we skip a month occasionally in the class notes you will understand the reason.

Since the July issue of *The Review*, a number of our classmates have passed within the Unseen Temple, viz: Mrs. Alphonse Boursaud, July 31; Simon Fleisher, June 5; William C. Fownes, Jr., July 5; James E. Hazeltine, June 26; and Henry P. Richmond, May 23. The following letter from Margaret O. Hazeltine is self-explanatory:

"Enclosed is a clipping of the passing of my beloved husband, James E. Hazeltine. He was an invalid, due to an automobile accident, for three years. He was always interested in M.I.T.'s activities and was proud of the fact his son, James E., Jr., '40, had done post-graduate work there. James, Jr., is now a chemist with the Armstrong Company at Lancaster, Pa. I send the clipping because of a request from you as secretary of the Class seen by me in *The Review*, July 1950."

The clipping follows: "Mr. Hazeltine, one of three living past presidents of the Warren County Council, Boy Scouts of America, was born in Warren on March 26, 1873. As a boy he attended the St. Louis Manual Training School, later attended Oberlin College, Musical Conservatory, and was graduated from . . . Technology in Boston in 1898. After

working for two years in Washington, D.C., he came to Warren and entered business with his father in the Bashline Valve Co., at North Warren. He was married to Margaret Olson, in Warren in 1909, and the young couple settled in North Warren after an extensive tour of Europe. He is survived by his wife and the following children: Mrs. Rachel Chamberlain, Ithaca, N.Y.; Mrs. Elizabeth Gibaud, Rochester, N.Y.; and James Jr., Lancaster, Pa. The following grandchildren also survive: David Chamberlain; John and Jonatha Gibaud; James III and Glenna May Hazeltine. Keenly devoted to his family Mr. Hazeltine, in addition to his business affairs, found time to devote a major portion of his life to work in behalf of his fellow-man. He had filled important offices in the North Warren Presbyterian church, including that of choir director, Sunday School superintendent, elder, trustee, etc. He was an accomplished musician and gave freely of his services as a violin player. He had been an active member of the Warren Rotary Club over a long period of years. It was in the Boy Scout Council where Mr. Hazeltine gave much of his untiring energy and cooperation. He was president of the council from January, 1927, to January, 1933, and as such was National Council representative. He was vice president from 1933 to 1934; member of the executive board, 1935 to 1949; honorary vice president, 1949-50. It was in 1934 that Mr. Hazeltine was given the Silver Beaver award, one of the highest honors in Scouting. Mr. Hazeltine was registered with Troop 13, North Warren, as committeeman, chairman and Scoutmaster, from November, 1925 to April, 1939, and has always been interested in the activities and progress of the Scouts, both in the Warren County Council and in North Warren." Thanks, Mrs. Hazeltine, for this kind response and the information.

We expect to have information concerning the other classmates, mentioned above, which will appear in subsequent notes.

Through the courtesy of the Alumni Association Office, we can report the following corrections for the Directory. Alfred H. Caspary, 71 E. 79th Street, New York, N.Y.; George T. Cottle, Algonquin Club, 217 Commonwealth Avenue, Boston 16, Mass.; Arthur L. Goodrich, in care of Valley National Bank, Mesa, Ariz.; Herbert E. Lawrence, 1837 Main Street, Athol, Mass.; Willard B. Nelson, Hulett's Landing, Washington Co., N.Y.; James Purdon, 310 Commonwealth Avenue, Boston 15, Mass.; Paul B. Wesson, 97 Vinton Road, Rochester 9, N.Y. These '98 men appear to be always on the move. How about a few words when you change your residence?—EDWARD S. CHAPIN, *Secretary*, 463 Commercial Street, Boston 13, Mass. JOSEPH C. RILEY, *Assistant Secretary*, 9 Pond View Avenue, Jamaica Plain 30, Mass.

• 1899 •

Perfect weather favored Alumni Day but despite this added inducement to attend, only three classmates showed up at the class luncheon on the campus; namely, Miles S. Sherrill, Hervey J. Skin-

ner and Burt R. Rickards. The same three, with Charles A. Schmitt, constituted the quota at the alumni dinner. Note all four were graduates of Course V.

Death has struck once more among the ladies who attended the 50th class reunion. The first time it was the wife of Stark Newell whose passing was recorded in the July, 1950, Review. This time we regret to record the passing of the sister of Miles Standish Richmond. Later, when your Secretary was in Boston, he telephoned Miles and extended the sympathy of the Class.

The Class has also lost its former assistant secretary, Arthur Harrison Brown, who died on June 7 at his home, "Horizons," at Marblehead Neck. Arthur, who was also at the reunion, was a member of the firm of Wright, Brown, Quimby and May, patent lawyers at 53 State Street, Boston. The Class was represented at the funeral by Miles S. Richmond, assistant secretary, who also saw to it that flowers were sent in the name of the Class. Arthur was a member of the Yacht Club of Marblehead, the University Club of Washington, the Boston Bar Association and the Boston Patent Law Association. He leaves a wife and two sons, to whom our sincerest sympathy is extended.

John R. Newell³⁴, son of our classmate, Stark Newell, has recently been elected president of the Bath Iron Works, succeeding his father, who had been president of the company since he reorganized it in 1927. Stark now becomes chairman of the board of directors. That John is well equipped to take over is indicated by the fact that after graduating from M.I.T., he worked at Bethlehem Steel's Fore River yard and later at that company's San Francisco yard before joining his father at the Bath Iron Works, which is rated "Grade A" by the United States Navy. The younger Newell recently gave a paper before a meeting of shipbuilders at the Boston Navy Yard on "Cost Control in Shipbuilding."

Ralph Loud reports that he is steadily improving from his operation over a year ago and his nine weeks' hospital stay. He hopes to get rid of the cane that has been his steady (or steadying) companion since then on his outdoors walks.—BURT R. RICKARDS, *Secretary*, 381 State Street, Albany, N.Y. MILES S. RICHMOND, *Assistant Secretary*, 201 Devonshire Street, Boston 10, Mass.

• 1900 •

After much cloudy and chilly weather, the 8th of June dawned fair and hot. It was the opening day of our long anticipated Golden 50th Reunion. The first event of the celebration was our attendance at the Senior Class Day exercises at 2:00 P.M. in Walker Memorial. Ten of the Class gathered for these exercises, together with four wives—not a large assembly, but a better percentage than the graduating class presented. The ten present were Brock, Fitch, Kattelle, Porter (from New Orleans), Price, Richardson, Russell, Silverman, White (from California) and the Secretary. There was little time for any sociability, but we listened to the exercises with much interest. For us, the high spot was the address by the

representative of the 50-year class, George Russell. George has been on the Staff of the Institute since 1905 and his choice as Class Day speaker was obvious. He gave a most interesting talk on the early history of the Institute.

Except for a few minutes of social amenities after the exercises, there were no other reunion events that day; but by ten o'clock on Friday morning the Class began to gather at the Armory to be initiated into the mysteries of cap and gown. Those present the day before were now joined by Z. M. Briggs, Delano, Hanson, Lawley, Leary, Moody, Newhall, Oxnard, Patch, Ripley, Charlie Smith, L. S. Smith, and Ziegler, and also, to our great pleasure, by Misses Bartlett and Durgin. This made a total of 25 classmates and there were probably at least 10 wives in the audience. The 50-year class was given a place of honor in the academic procession immediately following the Corporation and preceding the Faculty. We were also honored by having, as marshal, the Secretary of the Alumni Association, Don Severance'38. It was a new experience for most of us to appear in cap and gown, but they were worn by all with dignity and grace! The day was hot and so were we, having to wear our coats beneath the gowns, since the latter had short sleeves. The exercises were most interesting and the awarding of degrees to some 1,200 graduates at one time was a thrilling experience.

After the commencement exercises we were entertained at luncheon in the Campus Room of the Graduate House by Dr. and Mrs. Compton and President and Mrs. Killian. This was one of the high spots of the reunions. Our Class was given particular honor at this luncheon and as its representatives, Charlie Smith and the Secretary, with our wives, were seated at the head table with our hosts and their honored guests. Dr. Compton and President Killian gave brief talks, quite complimentary to the Class, and these were responded to, humorously by Charlie Smith and briefly by the class secretary. One interesting feature of the day was the fact that Miss Bartlett brought, as her escort, Alan Foye who, it developed, was the son of our freshman battalion major, Fred Foye.

Following this luncheon our program called for a change of location from Cambridge to The Pines in Cotuit, on the Cape. Nearly everyone had his own car and there were plenty of vacant seats which Percy Ziegler, as master of transportation, could assign to those needing them. The day was fine and the trip was made without event except that Paul Price had the misfortune to have his fuel pump fail somewhere near Quincy; and as no suitable replacement could be found, he had to complete the journey by taxi. Most of us arrived at The Pines in ample time for the evening meal.

After dinner, all hands strolled over to the Evergreen, a magnificent summer mansion which is part of the property of The Pines, for a social evening. There was no program but everyone was quite content to meet his friends, renew old acquaintances and pick up the broken threads of fellowship.

Next day, Saturday, others of the Class appeared so that, although seven of the 25 at commencement did not go to The Pines, 18 others joined us making a total of 36 of the Class present. As the affiliates of the Class with known addresses now total 179, this made a very good showing. Those who joined us at The Pines were: Atwood, Blair, E. F. Brigham, T. W. Brigham, Conant, E. H. Davis, Draper, Everett, Grant, Harps, Hart, George Leach, Manley, Sanders, Thayer, Tuck, and Walworth. The wives present were: Mesdames Allen, Atwood, Blair, E. F. Brigham, T. W. Brigham, Davis, Delano, Draper, Everett, Fitch, Grant, Harps, Hart, Kattelle, Lawley, Leach, Leary, Manley, Newhall, Patch, Porter, Price, Richardson, Russell, Smith, Thayer, Tuck, and White. Crowell brought two daughters, Richardson his daughter, and Everett his son and grandson. We were very happy that Mrs. Ingersoll Bowditch could be with us, and that Mrs. Burt Cotting visited us on Sunday afternoon. We felt much honored when, on Saturday afternoon, Dr. and Mrs. Compton arrived to be with us until Sunday morning. This was most gracious of them considering their heavy schedule, particularly at this commencement season. President and Mrs. Killian had promised to come also if possible, but his appointments were such that he could not squeeze in a visit to The Pines.

Saturday was spent in visiting each other, talking over old times and renewing old friendships. A few slipped away for a game of golf and returned at lunch time without any records to be published, but tired and happy. Saturday evening the hotel management gave us a splendid banquet with special souvenir menus 'n everything. There was no program nor any speeches at the banquet, but we adjourned to the drawing room of the Evergreen for a meeting of the entire assembly. By what seemed to be general consent, the Secretary assumed the duties of master of ceremonies. After a brief welcome to all present, a short business meeting of the Class was held. These quinquennial reunions constitute about the only meetings of any considerable number of the Class. Charlie Smith, in his inimitable way, explained to us the situation with regard to the class gift which was to be presented to the Institute at the Alumni Banquet the following Monday. While the Class had raised a respectable amount for this fund, it had not reached the amount hoped for, and Charlie made a strong plea for an increase.

The Secretary then reported on the receipts and expenditures of the class treasury since his taking office in December, 1947, reporting the balance on hand to be \$98.84 with some bills yet to be received. He suggested that a contribution be made by the members present to be available for future expenses. This was later done very generously. Following the business meeting, the Secretary thought that there ought to be music of some kind. As none had been arranged for, and no one volunteered, he gave a demonstration of why he was rejected as a member of the glee club in his freshman year in a musical (sic) statement of how much he detests early

rising!

Dr. Compton then was introduced and gave us a splendid talk concerning the Institute, its present condition, its hopes and aspirations and its needs. A few questions were asked which he answered adequately. The Secretary then read a number of letters from members of the Class who were unable to be present. This included letters from Borden, C. C. Brown, Cayvan, Chalmers, Charles Davis, Dutton, Frink, Gibbs, George Hall, Jouett, Miss Langford, Bob Leach, Morgan, Morris, Ober, Perry, Rapp, Sears, Sater and Mrs. Thorpe. Parenthetically, we later received telegrams of regret from Salvador Madero (from Mexico) and Charlie Leeds. It had been intended that we would end the evening with reminiscences by various members of the Class, but the evening was getting late and after one by Harry Grant the meeting broke up, regrettably.

Sunday morning started with showers but these soon ceased and the day became a fine one. The day was spent much as the preceding one, with social grouping. Jim Patch was everywhere with his camera. A few upheld the tone of the party by attending the local church. A number found it necessary to leave for home during the day. By evening our group was reduced at least fifty per cent. The remaining members again assembled in the drawing room of the Evergreen in the evening. After a short "sing" which seemed to be greatly enjoyed, the M.C., George Russell, called on each member present to give a short account of himself. This developed many items of great interest and completed this portion of our reunion. It had been attended by 36 of the Class and 38 guests.

Monday morning, after an early breakfast, all left for Cambridge for the Alumni Day celebration. We assembled there in time for a brief social period before the luncheon. This was served cafeteria style for most of the Alumni, but the 50- and 60-year classes, together with the symposium speakers, Dr. and Mrs. Compton, and President and Mrs. Killian, were served at a special table reserved for them.

After the luncheon a number of the Class attended the symposium on the subject, "Access to Ideas - Is Reading Obsolete?" in the Charles Hayden Memorial Library and later several went to the open house reception at the President's home. In the late afternoon the Class assembled in a room at the Copley Plaza for a social hour before the banquet. Twenty-four of the Class attended this banquet, namely: Atwood, Blair, T. W. Brigham, Everett, Fitch, Gowell, Jennings, Kattelle, Lawley, Merrick, Newhall, Oxnard, Patch, Porter, Price, Richardson, Russell, Silverman, Charlie Smith, L. S. Smith, Stearns, Walworth, Ziegler and the Secretary. George Russell and Charlie Smith sat at the head table, the former as the 50-year speaker on Class Day. Charlie made the official presentation of the class gift to the Institute, which was accepted by Dr. Compton. It is hoped that this gift of \$25,000 will be materially increased before the campaign of the Committee on Financing Development closes. Simultaneously with the ban-

quet, the ladies were attending a banquet of their own in the Sheraton Room. Our Class was represented by seven ladies: Mmes. Bowditch, Cotting, Merrick, Porter, Price, Russell and Smith. During the program of the men's banquet the ladies attended the Pops Concert.

With this banquet our long anticipated Golden 50-Year Reunion came to an end. In all, 47 of the Class and 41 guests attended some part of the festivities. This is probably the largest number of the Class that has ever assembled at one time since the day of our graduation. It constitutes 26 per cent of the known living members of the Class. The number attending the reunion at the Cape was slightly exceeded in 1925 and in 1940; but considering the reduction in number of living members, the per cent attending this year was greater. Nine attended a reunion this year for the first time. Six have attended all six reunions and six more all but one. All in all, this reunion seemed to be voted the best and most enjoyed of any we have ever held. Our thanks are due to the management of The Pines for entering whole-heartedly into our plans and doing everything possible for our enjoyment. The Secretary also wishes to thank all members of the Class for their prompt and enthusiastic response to his letters, whether they could come or not. He also wishes to thank for their co-operation the Committee of Arrangements which included Stanley Fitch, George Russell, Charlie Smith and Percy Ziegler. Without their help and advice the affair could not have been successful. George Russell is particularly to be commended for his discovery of The Pines which proved to be an ideal meeting place.

One of the happy features of the reunion was meeting, the first time for many of us, Stanley Fitch's wife. So it is with great sadness that we have to report her sudden death on August 25 at their summer home on Nantucket. We all join in the greatest sympathy for Stanley. We have also received word of the death in August of Hugh H. Hanna, VII, of Indianapolis. — ELBERT G. ALLEN, *Secretary*, 54 Bonad Road, West Newton 65, Mass.

• 1901 •

At this date of writing, 32 data sheets have been received from the 190 members of the Class. I hope that many of you who have buried the forgotten sheet under other papers will look it up before it becomes yellow with age and send it in with your class dues. The class notes must go on and material is needed. These notes are taken from data sheets received last spring after the class letter went out.

Charles I. Auer, III, 902 Park Road, El Paso, Texas, gives as his occupation — mining and fancy woods. He adds: "Was 70 years old on September 17, 1949. My grandson, Irving I. Borschow, hopes to graduate from Western Texas College, branch of the University of Texas at El Paso, this coming June in business administration. He also attended New Mexico Military Institute at Roswell, N.M., for five years." Charles is an honorary secretary for M.I.T. From Benjamin F. Clark, II, 36 Broad Street, Washington, N.J.: "Retired since 1945 from Taylor-Wharton

Iron and Steel Company. I find interest in reading and travel and in some participation in the local affairs of this north-west Jersey town. Am treasurer of the Benevolence Fund of the Methodist Church here, a member of the local Council of Churches and a director of the local Y.M.C.A."

John A. Ross, Jr., XIII, 8 Cedar Street, Potsdam, N.Y., reports: "Retired from presidency of Clarkson College of Technology in October, 1948. Bought an old house which makes my present occupation a little of everything — architect, carpenter, general repair man. Escape a good deal of the above by traveling as much as possible to the east coast and west coast in summer and Florida in winter." King H. Knox, VI, 411 Roumain Building, Baton Rouge 6, La., says that his present occupation is "minding own business." I know that the Class sends sympathy to Farnum F. Dorsey, II, 205 Garfield Place, South Orange, N.J., who writes: "Sorry I cannot attend the reunion. I am practically confined to the house by physical ailments."

As is the case with so many of our classmates, W. G. Blauvelt, VI, 8055 La Jolla Shores Drive, La Jolla, Calif., tells us that he is the "handy man about the home, garden and orange grove." P. Freeman Goodwin, 11 Brown Street, Kennebunk, Maine, Construction Engineer and lieutenant colonel, Corps of Engineers, U.S.A., Res. World War I, now retired. Another one. Howard I. Wood, V, 101 Union Street, Rockville, Conn. "Retired and in good health. Member of two boards of trustees — president of one and secretary of the other. These, with home grounds in town and a quarter acre garden in the country during the summer, keep me fit and busy enough to be still interested in life."

Still another. D. Leighton Ordway, V, 111 Gibbs Street, Newton Center 59, Mass. "Retired. To one who likes travel there is one objection to being retired in New England. There is no place pleasanter than near home to visit when one travels. I agree with Bob Derby who says that Guatemala is the nicest country in Central America. I was there in July with the sun directly overhead and yet I slept under a blanket every night. Next summer I may try Europe again. Guy Peterson's annual letters set a high mark for his successor to shoot at. I feel sure, however, that the right person has taken over and that we will have no reason to complain. The 50th anniversary of the Newton High class of '97 was so much fun that I look forward with much anticipation to the doings at Oyster Harbors in '51."

V. F. Holmes, V, Post Office Box 143, Amherst, N.H., reports for his occupation: "Mostly lawn care in the summer. Shoveling snow except when in Florida where it is golf and color photography. I am hoping for a big reunion in '51. Let's hope we will have our biggest turnout." One more in the leisure class. Leonard D. Chandler, II, 369 Adams Street, North Abington, Mass. "Retired some time ago. I spend my time working a small garden at home, keeping my summer cottage at Manomet Point, Plymouth, Mass., in repair, with some fishing and so forth, looking after

some other real estate and performing my duties on the investment board of the Abington Savings Bank." I have just received word that Joe Evans' address now is 44 Billerica Street, Chelmsford, Mass.

I quote from a letter to Bob Williams from Ed Davis (written in February). "I enclose my o.k. for the reunion in '51. Only news is what I am disgusted to write — I've been fired — under pension, of course, and am a 'poor relation.' Occupationally speaking, I had hoped to die with my boots on, chiefly because my work was so much fun that I hated to stop it. But there is balm in Gilead. I had for half a dozen or more years been devoting spare time and considerable overtime at the office to a rather detailed research into certain of our company's products — metal buttons going back to 1804 (and supplying all the wars of the United States as well as a good many railroads, schools — including Technology — and the like) and medals and tokens from the 1830's. Two bad fires at the plant had wiped out most of the pertinent records and destroyed the larger part of the collections. My aim was to organize and identify what we had left and to complete the record. I was about half way through it when the bolt descended from the blue. However, the management liked the idea and was willing that I keep on to a finish, as a hobby. They gave me a room and a key and the run of the plant and use of all facilities. So I have maintained a half-day routine there and it has been fun. Also, my increased time at home has offered much opportunity for reading aloud with my wife and sawing wood and putting my fairly extensive library into shape. *And economizing!*"

Bob Williams writes that a meeting of the General Reunion Committee was held in Rogers Building on Alumni Day previous to the luncheon in Du Pont Court. This committee now consists of the following members and includes among others the former class presidents now living: R. L. Williams, General Reunion Chairman, 1941 President; Edward Seaver, Vice Chairman, 1917 President; A. W. Higgins, Class Gift Committee Chairman; P. W. Moore, 1946 President; Lammot du Pont, 1936 President; J. T. Scully, 1909 President; J. F. Monaghan, 1915 President; T. H. Taft, Secretary-Treasurer; W. W. Dow, Assistant Secretary-Treasurer; Mrs. P. W. Moore, Chairman of Ladies Committee. On account of being in Florida, Al Higgins was unable to be present but a letter from him was read in which he said that having now retired from the Florida Power Corporation he would be able to devote more time to the class gift. Mrs. Moore outlined the plans she is making for the ladies at the reunion. Ed Seaver was appointed to form a nominating committee. He was also asked to take care of arrangements for the transportation from Boston to Oyster Harbors. Ted Taft was requested to look into the cost of preparing a class directory and necrology. Joe Evans was named class toastmaster. When seen at the alumni luncheon, he said he would be glad to serve. We were honored by having H. E. Lobdell'17, Executive Vice-president of the Alumni Association, present at our table at the

alumni luncheon. Phil Moore was here from Chicago on August 22 and a meeting of the General Reunion Committee was held at the New Ocean House in Swampscott. Those who were able to attend were Mr. and Mrs. Moore, Mr. and Mrs. Higgins, Ed Seaver and Bob Williams. After an enjoyable luncheon, further plans for the reunion were discussed and crystallized.

The following from the Class were registered for Alumni Day: Joe Evans, Phil Moore, Bart Schlesinger, Ed Seaver and Bob Williams. — THEODORE H. TAFT, Secretary, 21 Cypress Road, Wellesley Hills 82, Mass. WILLARD W. DOW, Assistant Secretary, 287 Oakland Street, Wellesley Hills 82, Mass.

• 1902 •

There were several small group meetings of class members in the early summer. About a week before Alumni Day, Robinson came down from Brunswick and several members of the Class, Hunter, Mahar, Moore, Patch, Philbrick, Sawyer, Taylor, and Williams, gathered and had lunch with him. Quite naturally the 50th reunion plans came up for discussion and progress was made in getting ideas and suggestions. Shortly after this meeting came the Alumni Luncheon and Banquet. In the absence of your Secretary, Hunter reports, regarding the luncheon: "Moore, Patch, Sawyer, Grant Taylor and I went through the mill at the luncheon together. Later, Bassett, whom we had seen earlier, joined us. When we had about finished eating, Luke Collier and Mrs. Collier came over. He had brought Mrs. Collier to the luncheon but they had eaten elsewhere not having spotted any classmates till they had finished the repast. Later we learned that Mahar had been at the luncheon and looked hard for his mates but failed to spot any of us." In the evening E. E. Nelson joined Bassett, Hunter, Mahar, Patch, and Taylor at the '02 table.

Plans for our 50th reunion have made considerable progress. Les Millar has appointed Dan Patch as general chairman. Dan has asked the class treasurer and secretary to serve in their same capacity for the reunion. Bassett, Hunter, and the Secretary are serving as a hotel or rendezvous committee to secure a good hotel or resort and according to the replies to the questionnaire a location on the Cape is desired. Redfield Proctor has been appointed chairman of the class gift committee.

Word has been received from the Alumni Office of the death of Harry B. Pond on May 22, 1950. Our class records show little regarding his recent activities but much of his work was in foreign countries. For four years in the late 30's he represented the Barber Asphalt paving interests and made his headquarters in Santiago, Chile. He also spent some time in Mexico.

Another classmate, Harry C. Messinger, died on August 2. Messinger spent two years in the biology course and then entered Harvard Medical and was graduated in 1904. He did post-graduate work in Boston and New York and spent four summers studying in Vienna. He established his practice in his native city, Provi-

dence, R.I., and ranked high in his profession. He had served as president of the Providence Medical Association and the New England Ophthalmological Society. He was a fellow of the American College of Surgeons and a member of the Rhode Island and Massachusetts Medical Societies, the American Medical Association and the American Academy of Ophthalmology and Otolaryngology. He leaves his widow, Helen B. V. Messenger, a daughter, Helen C. Messenger of Japan, and two sons, Richard D. Messenger, of California, and Dr. Harley B. Messenger of Providence, who is now at M.I.T.—BURTON G. PHILBRICK, *Secretary*, 246 Stuart Street, Boston 16, Mass.

• 1903 •

Your Assistant Secretary had a busy summer. It seemed as though it were the whole summer, although it was only five weeks, traveling across the country from Cape Cod to San Francisco, and points north and south. Getting home again on the twentieth of August, he began to pick up various loose threads, and get into the swing of things again. The first item he found was the class meeting on Alumni Day in June. These men were present at the meeting and the luncheon at the Institute: A. B. Allen, I. F. Atwood, G. H. Clapp, L. B. Gould, C. F. Green, R. J. King, T. E. Sears, L. L. Thwing, and the Secretaries, with Mrs. Clapp, Mrs. Eustis, and Mrs. King. Matters pertaining to the class 50-year gift were discussed and good progress was reported—more about that will come to you from time to time during the next three years. Remember that gifts to the Development Fund, if made through the Class, will also be credited to our 50-year gift, if made this year. Several of the district chairmen are at work, and everyone of the Class should be contacted in due time.

During June, we heard from F. B. Crosby, who is on a part-time basis with Morgan Construction Company of Worcester, Mass., as their west coast representative, and is living at Hermosa Beach, Calif. He writes that he has "nearly reached the Biblical limit of three score ten, but as I am very fortunate in still enjoying good health and did not wish to retire, the arrangement is proving very satisfactory in every way. As required, I may range from Vancouver, B.C., to Monterrey, Mexico." He is looking forward to June, 1953, when he hopes to be with us. A letter from H. S. Morse suggested that he might drive east in September. Hewitt Crosby and Gib Gleason gave us cordial invitations to stop and see them on our way home, and we were able to accept Crosby's invitation. Spent two hours at his very attractive house in the hills of northern Maryland, compared notes on various things, and got re-acquainted. While staying over night at Las Vegas, Nev., we called on Frank D. Rathbun, but found nobody at home. The next door neighbor told us that he had died last October, that he was well liked, a good neighbor and his death was a loss to Las Vegas. Could get no further details. Due to the fact that we were traveling with other people, we were not able to get in touch with other

men on the Pacific coast, much to our disappointment.

When we got home we found notices of the death of Hiram Fred Peaslee. Fred had attended several class meetings in recent years, and had been living in Merrimack, Mass., for a number of years. He died there on June 14, after a long illness. Born in Haverhill, Mass., he came to the Institute from Haverhill High, was active in athletics, being manager of the basketball team, member of Hare and Hounds Club, and was a long-distance runner. He leaves his wife, four daughters, three sons, and twelve grandchildren. Ever since our freshman year, he had been the custodian of the sophomore flag, which was secured at the cane rush that year. A brief note from W. L. Cook states: "I have retired, am in good health, but have slowed up a bit since 1903." He is living in Arlington, Va. — FREDERIC A. EUSTIS, *Secretary*, 131 State Street, Boston, Mass. JAMES A. CUSHMAN, *Assistant Secretary*, Box 103, South Wellfleet, Mass.

• 1905 •

Naturally the first item of interest is in regard to our 45th reunion. A ballot taken early in the spring showed 26 in favor of holding it on Cape Cod, 18 for a mid-point between New York and Boston, 10 in favor of some point near Boston. Hence your committee, consisting of Bill Ball, Chairman, Ed Barrier, Bert Files, Sam Shapira and Sid Strickland selected the Oyster Harbors Club at Osterville, Mass., and June 13, 14 and 15 as the dates. Several drove down Monday night and several from a distance stayed over to enjoy other Cape Cod points, Boston and vicinity. The total attendance was 54, which included 16 wives. Present from Boston and vicinity were the Barriers from Barnstable, the Balls from Cotuit, the Hadleys, Lovejoys, Prescotts, the Files and the Shapiras, also free lances Leavitt, Kenway, Marcy, Buff, Joslin, Eichler from Hyannis Port, Strickland, Crowell, Donald and Tower! Ed and Mrs. Barron drove up from Pittsburgh, Clarence and Mrs. Gage from St. Petersburg, Frank and Mrs. Webster from Coral Gables, Dez and Mrs. Schonthal from Huntington, W. Va., Wallace and Mrs. Taylor from Cincinnati, Charlie and Mrs. Smart from Troy, N.Y., Roy and Mrs. Allen from Cambridge, N.Y., and Norman and Mrs. Lombard from Scarsdale. Stags present from a distance were Ros Davis from Middletown, Conn., Fouhy, Gilbert, Amberg, Rhodes and T. Shaw from New York and vicinity. Dwyer was in from Detroit, George Fuller from Kansas City, T. Green from Buffalo, Maurice Weaver from Washington, D.C., Bartlett from Camden, Johnston from Portsmouth, Va., and, of course, the Secretary and Mrs. Goldthwait.

For one obvious reason no active sports program was arranged. The "tops" foursome in golf included Ball, Barron, Schonthal and Rhodes, while a threesome with Bartlett, Johnston and Goldy waged a booby battle, principally with bunkers and sand traps. The prize went to Schonthal for the best net (choose your own handicaps). Bill Ball took many of the party out in groups in his cruiser *Rabbit*

Ears. Other unscheduled sports were contract with the Lovejoys, Smarts, Gages, Prescotts holding the honors, (occasionally) chewing the fat (by all), reminiscing, oohing and ahing over family pictures, mostly of grandchildren, and so on. Henry Buff's sister and her friend, who came over from their summer home at Hyannis for a visit, gave us a full evening showing of films Henry had taken, many of class interest, many of interesting points in their travels. Ralph Hadley couldn't find anyone to play tennis, hence kept his racket in wraps.

A very enjoyable cocktail hour was spent at Ed Barrier's home across the Cape at Barnstable. Ed reveled in showing us his very substantial flower and vegetable gardens. Ed retired this year not to a life of leisure, but to a love for vegetation and takes warranted pride in his products, Isa in the canning of same. Bill Ball regaled us (the men) with some of his inimitable stories but got sort of "balled up" in his lecture on cetology, but it was a whale of a good time. By Wednesday night most had departed, thereby missing a grand evening of fun at the Amberg-Dwyer Chalet, "The Fairways," also on the Club grounds. Besides these excellent hosts were the Barriers, Balls, Barrons, Lovejoys, Lombards, Taylors and Goldthwaits. It was a grand finale to a bang-up good reunion. Space prevents detailing all of the high lights, but those unable to attend missed a great deal, a beautiful hostelry with spacious grounds, splendid accouterments, excellent accommodations, good food at one of Cape Cod's finest locations.

At a class meeting on Tuesday night a committee was appointed to select a proper committee to take charge of our 50th reunion, which includes preparation of the class gift, Alumni Day activities, and so on. It was also voted to hold a 46th reunion for those handy enough and interested in attending. It was interesting to note that fellows who had not been back since graduation and had seen very few of their classmates, seemed to pick up where they left off and carry on as when at the "Tech on Boylston Street." "This is our first reunion, but we'll not miss another" was the common conclusion of the first timers.

Present at the Alumni Day luncheon at Cambridge on Monday were Allen, Babcock, Buff, Chesterman, Fisher, George Fuller, Gammons, Johnston, Joslin, Lewis, Lines, McLean, Schonthal, T. Shaw, Shapira and Wallace Taylor. Babcock, Buff, Chesterman, Fuller, Gammons, McLean, Shaw, Joslin and Schonthal attended the Alumni Banquet in the evening.

Clarence Gage after his return to St. Petersburg writes of his experience: "We traveled 1,701 miles to attend the reunion; Webster was the only other classmate who traveled farther and many others who lived within a half a day's trip did not show up. Mrs. Gage and I enjoyed the reunion very much. I saw many of the fellows I wanted to see and Mrs. Gage met many of the ladies she had met in 1945. When a graduate is as old as we are, he either: 1. Has enough money to retire and live comfortably. 2. Has to retire on account of his health. 3. Still has to keep his nose to the grindstone. 4. Works because he likes it or doesn't know enough to quit.

I am in Class 2. Jack Flynn is in Class 4. He writes that: "I was 67 on July 19 and am hitting on all six working from 9:00 A.M. to 8:00 P.M., seldom take a day off and hope to have a grand barbecue for my friends to celebrate my 100th birthday." I expect to live to be 100, too, but I don't envy him—I hope that my money will last long enough to get through life. Foully, who is a lawyer in New York was telling me of the time he was sick and the doctor told him he would have to take a long rest. His reply was: "Where will I get the money to live on, if I am not working?"

Someone at the reunion asked me in regard to vital statistics. Our Ten Year Book showed an original membership of 621. Of these, 64 have been removed because of lack of addresses over a period of years. Of the remainder, 234 are deceased. We carry on our active list 202 members, 121 on the inactive. All graduates are carried on the active list, also those who, by payment of dues, corresponding or attending reunions or class meetings, have shown some class interest. On the inactive list, which is also circularized on all matters of special class interest, are men (and co-eds) who are listed as '05 members in the Alumni Register. Sixty-five per cent of graduates are alive, of non-graduates 72 per cent, which allows your own interpretation. One hundred and ten members paid their 1949 class dues. Any other questions in this category?

In reporting their regrets at not being able to attend the reunion some interesting news came to light. Ray Bell writes from Chestnut Valley, Corbin, Va.: "I note that quite a few of the boys are retired and I thought I was, too, for after 1945 I came to the plantation to settle down and all went well until a year and a half ago when I got drawn into the resistance movement to the welfare state and have been getting deeper into it ever since. Now I have an organization bigger than ever but of a very unique character. It is composed of 12 subsidiary firms of consultants in management each covers a particular field and is non-competing. Nothing like it in the U.S.A. today. But that would not stop me from coming to the reunion but a new matter that came up last week. I have been asked to take the place of Jackson Martendell, President of the American Institute of Management on the television program known as "Wall Street" which is telecasted from WPIX, New York *Daily News* every Thursday evening between 7:30 P.M. and 8:00 P.M. It is understood that he will be named shortly to take the place of Myron Taylor as the personal representative of the president to the Vatican and he was particularly anxious for me to take over. So I am doing so beginning May 4. I want to get approximately 25 programs sketched out while he is available so I will be a 'heep busy injin' during the next two months. Particularly so as it is a guest program to which are invited top men in industry, banking, education, labor, and so on, to discuss with me financial, social, economic and labor problems as they affect Wall Street and the enterprise system. So tell the boys that I am going down fighting and am sorry I cannot see them to receive their sympathy." Carroll Curtis brings us up to date

with some sad news: "Last October my wife passed away and in June I retired from business. This retirement was one reason why I did not attend the 45th reunion as there were several odds and ends to clean up as you can understand. I have been at the cottage at Peaks Island since June 15 and will no doubt remain here through September after which my plans are rather unsettled. My wife's death was very sudden which in a way is a blessing, no lingering sickness. It was the heart, of course, and all over in less than half an hour. A terrible shock but a blessing in one way as I said before."

We were terribly shocked by a letter from the sister of Mrs. Harold B. Harvey, telling of her death in June, just a few months after Pete died. Those of us who had known her at reunions appreciated her fine gentle nature and what a help she had been to Pete all these years. William Tufts (Bill) died at his home at Candy Hill, Sudbury, Mass., on August 11. The last time I saw Bill in Boston, early last spring, he seemed in good health and spirits, but Mrs. Tufts writes that he suffered four months of a malignancy, very courageous to the end. A local paper gives us this story: "Funeral services were held . . . for William Tufts, husband of Jane Milliken Tufts of Bay Point, Rockland, Maine, and Candy Hill road, Sudbury, who passed away August 11, after a few months illness. . . . Mr. Tufts was born in Boston, February 8, 1883. He was a graduate of . . . Technology, with the class of 1905. For many years he was connected with the Factory Mutual Insurance Company of Boston. During World War II, Mr. Tufts was with the First Service Command in the protection department, with headquarters in Boston. A member of the Sudbury Water Commission for many years, Mr. Tufts was extremely interested in all affairs of the town. He had recently compiled and published an Historical Record of the Old Revolutionary cemetery, which he presented to the Goodman Society, Sudbury, of which he was an active and valuable member. His fraternal affiliations includes membership in the Revere Lodge, A. F. and A. M. of Boston. Survivors are, his wife, one daughter, Mrs. John Dipple (Joy Tufts) and two grandsons, William Tufts Dipple and John Christopher Dipple of Cleveland, Ohio."

Clarke Warren writes as follows: "Returning from a 6,000 mile drive to the Pacific Coast without a bump or a scratch on my car I was run into by a 20-year old youth right in my home county on a wide open road. He ran through a large sized stop sign and hit the front end of my Chrysler throwing my wife and granddaughter out of the front right door onto the pavement. By some miracle the child landed in the arms of my wife and escaped injury as did I. Mrs. Warren, however, was badly bruised. Am happy to report that she is just about fully recovered, also while I am reporting I am proud to bring the records up to date with the announcement of the birth of my first grandson. His advent makes a total of six grandchildren, five of them girls." Charlie Smart, after 30 years with the W. and L. E. Gurley Company of Troy, N.Y., was recently elected president and general manager. Congratulations, Charlie. Ches-

ter Allen reports "Seven grandchildren and expecting in October. Expecting a grandchild, of course."

Fred Poole, who reportedly had retired two years ago says it "didn't stick." "A year of alleged retirement, in 1948, was spent mostly on catching up about 10 years lost sleep and in starting to become an amateur ornithologist. My health improved wonderfully on rest and a fruit diet. However, retirement became a little monotonous so I resumed as full-time engineering consultant to one of my former Philadelphia clients who manufactures chewing gum and have been having a whale of a good time at it for the past year and a half. The 'birding' habit is growing also, in spare time and is about the best hobby I ever blundered into, because it is outdoors, on the feet, anywhere, anytime. I am looking forward to spending September with my daughter and her husband at Ocean City, N.J. Hope you are enjoying living as much as I." Maurice Landers has transferred his business to 1502 Pratt Street, Dallas, Texas. Ralph Nesmith has moved from Dayton, Ohio, to 204 Higgins Street, Howell, Mich.; Lloyd Buell from Los Angeles to 3101 Louisville Street, El Paso, Texas. At the annual commencement exercises of Trinity College, Hartford, Conn., Edward H. Lorenz received the degree of master of science. Rear Admiral Andy Fisher tells us that Prince Crowell again won the Cape Cod Championship this summer. Speaking of sports, Percy Goodale again had his innings in the famous Father and Son Golf Tournament at the Winchester Country Club this summer. Percy, who has played in every tourney since 1920, was melancholy as he talked of playing in previous years with sons Bob, Ben and Junie as well as grandsons Jimmy and Tommy. But they have all moved away with Ben and Junie now living in New York and Bob in Chicago with his two sons, Jimmy and Tommy. As things turned out, the grand old man of these tournaments was able to play one round this year because Bob made a special trip from Buffalo.

One very special item I do not have to learn second hand. My daughter, Nancy Ray, was married on May 10 to Hugh A. Craigie, M.I.T. '48 by the late Dean Everett Baker, who was dean of men at Technology. Ushers were Bob Bigelow '49, Al Shelby '45, Holmes Taylor '48 and Herbert Ayres '48, all of M.I.T. — FRED W. GOLDTHWAIT, *Secretary*, 274 Franklin Street, Boston 10, Mass. SIDNEY T. STRICKLAND, *Assistant Secretary*, 69 Newbury Street, Boston 16, Mass.

• 1907 •

At the M.I.T. Alumni Day on June 12 the following '07 men were registered: Clinton Barker, Howard Chase, Bill Coffin, George Crane, Louis Freedman, Ralph Hudson, Ed Moreland, Bryant Nichols, Don Robbins, and Phil Walker.

The address of Frederick W. Amadon is now 2301 North Kentucky Street, Arlington 5, Va. Through the courtesy of Henry Martin, our classmate who lives in Washington, D.C., and who talked with Amadon early in September, I have learned that Fred had a nervous break-

down in the early part of this year and has been at home for several months. He intends to retire soon, after approximately 30 years of service as an engineer in the Division of Research, Bureau of Motor Carriers, Interstate Commerce Commission, in Washington. — Anthony Arnold wrote me last May stating that on May 24 his resignation as vice-president and treasurer of the American Agricultural Chemical Company was accepted, and that his correct mailing address is at his home at 538 Lawrence Avenue, Westfield, N.J. Arnold had been associated with this company ever since June of 1907. — A story in the New York Times of March 19, 1950, tells of the marriage of Mary Stair Dempwolf, daughter of our classmate, Fred Dempwolf and his wife, to Schofield Andrews, Jr., of Philadelphia on March 18. — A postal card showing the interior of the drawing room at Oyster Harbors Club was received by me on June 17, the sender of the card being John Frank, who wrote, "I am down here with National Association of Fan Manufacturers. Seems strange not to see '07 men across the lobby." — Hud Hastings, who is professor of economics at Yale University, spoke on the "Yale Interprets the News" radio program last April discussing the need for improvement in human relations in industry.

The name of our classmate, Clarence D. Howe, who is Minister of Trade and Commerce for the Dominion of Canada, appears frequently in newspapers and magazines in connection with the affairs of the Dominion as well as in relation to international matters. The Boston Globe of June 2, 1950, contained a story telling of the dedication on June 1 of the new 10-story International Aviation Building in Montreal. This \$4,000,000 structure will serve as the air capitol of the world's civil aviation activities. Clarence was one of the speakers at the dedication ceremonies and also cut the gold ribbon held across the entrance of the building by four stewardesses representing four different air lines. The September 9, 1950, issue of *The Globe and Mail* published in Toronto, Canada, contained a front page article entitled "Howe Confident Arms Won't Cut Living Mode." From this article I quote a few paragraphs: "Confidence that Canada can meet the increased needs for defense without reduction in the standard of living, and without regimentation and control, was expressed in the House of Commons today by Trade Minister Howe. While expressing that view, however, and basing it largely on the premise that there never was a larger supply of goods in Canada nor a greater capacity to produce more goods, Mr. Howe was asking for stand-by powers to control the production, distribution and price level of essential goods. He was introducing the essential materials bill, which will put back in his hands some of the sweeping powers he exercised during the Second World War as minister of munitions and supply. . . . At the 1939 special session of parliament Canada faced an immediate and relatively bigger industrial and economic task than now. The Prime Minister, then Mackenzie King, introduced his munitions and supply bill providing for the creation of a department with authority to mobilize the resources of

the nation for the production of munitions and essential supplies. Howe was there, but hadn't yet been designated to do the job and passing the law which was to make Howe, a little later, and for the period of the war, a practical dictator over Canadian industry."

The Buffalo, N.Y., *Courier-Express* of April 30, 1950, had a story about the history and activities of Pratt and Lambert, Inc., manufacturers of paints and varnishes. Since 1930 our classmate, Roy W. Lindsay, has been vice-president, treasurer, and a director of the company. He has been associated with this concern since 1908, when he became their chief chemist. Roy is also vice-president of the Canadian Paint, Varnish and Lacquer Association and of the corresponding United States organization. He is a member of the Board of Directors of the Buffalo Better Business Bureau and is affiliated with the Buffalo Club, the Buffalo Athletic Club, the Park Country Club, the Gyro Club, the Buffalo Automobile Club, and Pilgrim Congregational Church. As in undergraduate days, he is still greatly interested in music and continues to play the clarinet for the enjoyment of his friends. He also is an enthusiastic golfer. The story in the Buffalo paper referred to above contains this sentence: "His unforgettable hole-in-one occurred at the Country Club of Bigwyn, Ontario, Canada." — George R. Norton, who has been general manager of Eaton Paper Company of Pittsfield, Mass., for many years, retired on July 31, 1950, and has moved to California. I have not yet secured his new address, but he can be reached by writing to him at 153 South Street, Pittsfield, Mass., with the notation "Please Forward." — During June I received a letter from John E. Tresnon, whose address is 81 West Virginia Avenue, Phoenix, Ariz., and from it I quote: "In April I was sitting in front of my house looking down the street when I said to my wife that a man was approaching who was clearly an Easterner and one of these winter visitors who dresses western after the fashion of the artists. To my surprise this man turned in my yard, and as he entered, I saw a tall, quite thin man of approximately my own age. He looked at me and said, 'John, do you remember me?' I looked him over and in about 15 seconds I said, 'Yes, you are Herbert Buttrick Hosmer of Concord.' I think I can lay claim to some kind of a record on this because I had not seen him or a picture of him or heard anything directly from him since 1907. I certainly did not know that he was in this district. The only connection I had had with him was through the records of class activities I had received from you. Hosmer swapped lots of stories and doings with me, and I was very pleased to become acquainted with him again because I remembered him very happily in school. You know he never forgot to remind me in those days about that bridge in Concord where on one April day his ancestors had an argument with some of my ancestors."

An item in the Boston Herald of August 21 told of the death in New York City on the previous day of Edwin Dexter Boles of our Class. Dexter was chief power engineer for the New York City

Board of Transportation, having been with this board for 22 years. Prior to that time he was a sales engineer with the General Electric Company and had traveled extensively for them both in this country and abroad. He also was a lawyer, being a member of the Massachusetts bar. He is survived by his wife, the former Constance B. Hayter of Melbourne, Australia. His home address was 130 West 12th Street, New York City. — When John Tresnon wrote in June, as referred to above, he enclosed a clipping from the Arizona Republic of Phoenix telling of the death on June 4, 1950, of James Samuel Coupal, whom most of you will no doubt well remember as having been active in football and other sports during our undergraduate days. Sam was engaged in mining operations and business during his entire career, at times having offices in Boston or in New York, but at other times being located in Alaska, New Jersey, Mexico, Venezuela, and Peru. He went to Arizona in 1920 and was actively engaged in the development of silver properties. In 1938 he took over the field organization work for the Arizona Small Mine Operators Association, and in the following year when the Arizona Department of Mineral Resources was established, he became its first director. In 1944 he resigned to return to private consulting practice. He was a director of the Arizona Chapter of the American Institute of Mining and Metallurgical Engineers, a member of the American Mining Congress and the National Society of Professional Engineers, and he was a registered mining engineer in Arizona. Sam never married and is survived by two brothers, Frank of Buffalo and E. Arthur, M.I.T. 1911, of North Abington, Mass. — According to word received from the M.I.T. Alumni office, Alfred J. Krafft, who was associated with our Class in the Course in Architecture, died on February 17, 1950. He was a member of the firm of J. E. Krafft and Sons, architects, of San Francisco, Calif. — On July 31, 1950, Morris A. Stewart, who was associated with our Class by virtue of his having received his graduate degree of Ph.D. at the Institute in 1907, died at Dover, N.H. He was a patent examiner at the United States Patent Office in Washington from 1908 until the spring of 1945, when he retired. — Although these notes are presumably dealing practically entirely with Tech men, I think it will interest those of you who have attended our class reunions at Oyster Harbors Club to know that John West, who was a Harvard man but who has attended several of our reunions, died in Worcester, Mass., on August 1, 1950. John's attendance at our class gatherings was due to his warm friendship with John Frank, Sam Marx, and Stud Leavell, and his friendship and business partnership with Alexander Macomber. — BRYANT NICHOLS, Secretary, 23 Leland Road, Whitinsville, Mass. PHILIP B. WALKER, Assistant Secretary, 18 Summit Street, Whitinsville, Mass.

• 1908 •

Many thanks to Henry and Mrs. Sewell for their hospitality on Saturday afternoon, June 10, at their home at Norwell,

Mass. The lawn party was a great success, as weather was good, the buffet lunch delicious, and Henry's famous "Fish House Punch" as insidious and successful as ever. The presence of our ladies made the party even more enjoyable. We should have more such get-togethers in the future, including our ladies, of course. The party broke up about 7:00 P.M., various groups moving on for dinner at places of their choice.

The following were at Henry's party: Mr. and Mrs. George Freethy, Leslie Ellis, Joe Wattles, Sam Hatch, George Belcher, Jim Burch, Doc Leslie, Linc Mayo, Nick Carter; also Jeft Beede who came stag, Mrs. Dick Collins, in Boston for a Wellesley reunion, who came with the Belchers, and of course our genial hosts, Henry and Mrs. Sewell.

The Class was well represented at Alumni Day on June 12 as Mr. and Mrs. Jim Burch, Nick Carter, Sam Gardner, Doc Leslie, Mr. and Mrs. Linc Mayo, and Henry Sewell had lunch together in Du Pont Court. Jim and Mrs. Burch were our hosts for cocktails at their suite at the Statler before the Alumni Banquet at the Copley Plaza.

The following were at the Banquet: George Belcher, Jim Burch, Nick Carter, Abraham Cohen, Leslie Ellis, George Freethy, Linc Mayo, Henry Sewell. Unfortunately, as the result of some mix-up in assignment of seats, we couldn't all be together, but were scattered among the several tables assigned to 1906-1920. However, we had a good time.

Bill McAuliffe had wanted to take in Henry Sewell's party as well as Alumni Day but was laid up in Hollywood, Fla. He is now feeling much better and back on his job. Sam Gardner was entertaining grandchildren from New Jersey, which limited his attendance at Alumni Day activities. Gregory Dexter had a very interesting article, "Check List of Low-Cost Plant Operation," in the May, 1950, issue of the *National Bottlers Gazette*. Congratulations to Harry Rapelye on his election last June as president of Continental Can Company of Canada. Rap had been vice-president and general manager. That may account for his not being able to be with us on Alumni Day.

We have previously reported the retirement of Herb Cole from the New England Telephone and Telegraph Company. I have recently learned that Herb was given a surprise party at the Sheraton back in June. His connection with the telephone business is natural as his uncle operated the shop at Exeter Place and Harrison Avenue Extension where A. G. Bell invented the telephone. His aunt, Alice Smith, had the first private 'phone in history. It is of interest that Warner Brothers tried to get Herb as a motion picture engineer, but his mother warned him that the movies were just a passing fad. I've just learned that Fred B. Cole, the well-known radio disk jockey, is Herb's son.

Abbot Thompson, for many years advertising manager of the United Shoe Machinery Company, has retired, I learn. I trust he will continue his interest and activity in the United Shoe Orchestra.

The state of Massachusetts and the Metropolitan District Commission suffered

a severe loss by the resignation last September of Karl Kennison as chief engineer of the construction division. The M. D. C. not only lost the services of an outstanding and nationally known hydraulic engineer, but one who probably knows more about the Metropolitan District Water Supply than any one else. He had been connected with the project, which is now nearly finished, from its start some 30 years ago, and it has been estimated that he and his organization saved the taxpayers some twelve million dollars of appropriations for the work. Karl resigned, with several of his key men, in protest against political interference, which was resulting in waste and inefficiency. Karl plans to keep busy as a consulting engineer on hydraulic problems.

The first dinner meeting of the 1950-1951 season will be held on Tuesday, November 14, 1950, at 6:00 P.M., probably at Thompson's Spa, Washington Street, Boston, Mass. Reply post cards will be mailed as usual. We hope to show some interesting Kodachromes and movies. Make your plans to be with us.

We report the following changes in address: Ygnacio S. Bonillas, Gante 4-207, Apdo. 2332, Mexico City, D. F., Mexico; Riggins Buckler, Buckler Fenhagen Meyer and Ayers, Federal Land Bank Building, Baltimore 18, Md.; Leonard S. Gerould, 214 Franklin Avenue, Pittsburgh 21, Pa.; William F. Grimes, 5800-15th Street North, Arlington 5, Va.; William C. Kerr, 1500 Frederick Road, Baltimore 28, Md.; Edwin M. Price, 302 Portland Place, Houston, Texas; Clifford B. Russell, 158 Monterey Street, Highland Park 3, Mich.; Arthur J. Schwab, 36 Lincoln Avenue, Binghamton, N.Y. — H. L. CARTER, *Secretary*, 60 Batterymarch Street, Boston 1, Mass.

• 1909 •

As usual, we were well represented on Alumni Day, June 12. Out in the Court celebrating our 41st reunion the following assembled for the luncheon: Chet Dawes, VI; Tom, I, and Alice Desmond; George Haynes, VII; Francis Loud, VI; Ken, VI, and Margaret May; Art, I, and Helen Shaw; Chic Shaw, V; Henry Spencer, II; Johnny Willard, II. At the Alumni Banquet at the Copley Plaza the following were at the '09 table: George Bowers, I; Chet Dawes; Brad Dewey, X; George Haynes; Francis Loud; Chic Shaw; Henry Spencer; Johnny Willard. Art Shaw had planned to come but was prevented by some testimony that he was obliged to give down in Connecticut. The Review office also informed us that B. Edwin Hutchinson had registered.

We have two letters from our class representatives in China. The following is from a letter dated July 26 from Art Morrill, XI, to Molly, XI: "Early in April we got word to close our W.H.O. China Office and withdraw the three foreign staff members who are still in China. I was very sad at the idea for a month or two but now the chances of doing any business here seem to be getting pretty dim, so I guess we might as well pull out. For a while I stalled along on the closing up, hoping that China would get into the United Nations and things would be bet-

ter. Actually, we had a great many little matters to settle, so it would have been hard to close up in a month or two, but now we have things pretty well in shape.

"We are closing the office officially at the end of this month but it will take a month or so to get our files packed and shipped, settle with the staff, get an exit permit from the local government, and get passage. No passenger ships have come to Shanghai for months though small freighters slip in and out once in a while. The only way for Shanghai people has been to go via Tientsin, which is a 36-hour train ride from here. It has not been possible to leave by Canton and Hong Kong, but it may be now. That is a much longer train ride but you are at least sure of a ship when you get there. There are only two or three ships a month from Tientsin and the war in Korea might upset things there. If you should write soon I would probably be in Shanghai long enough to get the letter but surely by September 1 you had better change my address on the class mailing list to 13563 Birwood Avenue, Detroit 4, Mich. I hope to be there on leave in October or November but will probably be spending some time first at the W.H.O. regional office in Bangkok and the headquarters in Geneva.

"My minor dissipation the last few weeks has been trying to unravel the meaning of some Chinese poetry written about A.D. 750, when the poets of China were really going to town. It is not so easy but with the help of a good dictionary I can often get a fair idea of what the poem means, which is more than I can do with most of the poems in English in *Harpers* and the *Atlantic*. I hate to think what this proves but that is the way it is."

The following is a letter from Art Knipp, VI, from Lingnan University, Canton, where he has been teaching with few interruptions since graduation: "A letter has been owing to you for a long time. I appreciated hearing from you and was happy to have Arthur Morrill come for a short call when he was in Canton in connection with his W.H.O. interests.

"Developments in China have been discouraging, have they not, during the past four years. No doubt you are as able as I to judge the various reasons for the changed political and social conditions. Unfortunately, there was something like chaos resulting from the eight years of war. The progress being made back in '35 and '36 seemed hopeful of a better outcome. The change-over last October took place without any serious fighting in Canton. It has surprised us that then and also since then westerners have been able to go about freely in the city. I have been asked only once to show the residence certificate. However, in only rare cases can a Westerner secure the exit-re-entry permit for going to Hong Kong. We are supposed to stay within the city limits. Train travel to Kowloon is quite inconvenient. Trains run only to the China border and passengers walk the ¾ mile or so to the Shum Chun station in Hong Kong territory. Until recently, Chinese have traveled freely to and from Hong Kong. Just now the Hong Kong authorities are trying to limit the number of Chinese entering the Colony.

"No doubt you know of some of the commendable features of the new regime — the excellent discipline of the soldiers, the frugality of the government officers, the stability of the currency. The soldiers are well taken care of. If the KMT had done as well by the men in its armies, it might still have control of a large part of the country. For four or five months the local money has not depreciated. Recently it has improved in value slightly in relation to foreign currency. But this has been accomplished only by heavy taxes and by requiring all classes of people to buy the government bonds. In the north conditions are probably better. Around here conditions are bad, many business men have gone to Hong Kong and most people have little money to spend. As yet it is doubtful whether the under-privileged people are any better off than they were before. As you know the announced aim of the new regime is to improve the lot of the farmers and villagers.

"Lingnan has been maintaining a sound and steady growth, with a large enrollment and fine additions of Chinese staff. The medical college is especially well staffed. Since 'liberation' there has been no direct interference from the outside. Indirect results of the change-over are not so good. Lingnan is largely dependent on tuition for paying staff — local staff — salaries and with business being interrupted, parents are unable to pay as high tuition as before. Other adverse effects may possibly become more important after a while. As yet it is the boys and girls in the secondary schools who seem to be most influenced by some of the new teaching. You can see that it is not feasible as yet to form an appraisal of the changes which are in the making. Our western staff is gradually being reduced. Those who go cannot be replaced for it is very unusual for a westerner to get the entry permit. Several families are about to go soon. My wife has been staying in Westtown since she left here to attend our daughter's graduation at the Westtown School. Just now she is at South Egremont with a friend and is enjoying that wonderful Berkshire scenery and the wonderful Tanglewood music. Peggy starts her junior year at Swarthmore in the fall. My furlough is due in February and I may be staying on till June, that is, unless conditions should be such as to make it advisable for the staff to leave sooner than that. My wife had wanted to come out in the fall, for us to return together next year, but of course recent developments make that out of the question.

"I was sorry indeed to learn of the sudden passing of our good friend, R. L. Jones. He was an outstandingly fine person. I was glad to hear from my wife that she had been told that Professor Jackson is well and strong. I wrote to him last summer."

Ramon Munoz, III, organizer and president of the Alumni Club of Monterrey, is as active as ever in promoting the interests of the Institute. We recently learned that he was visiting Ben Pepper, I, at his summer home at Crow Point, Hingham, and talked to him on the telephone. This past summer he has been touring Europe with Lobby, visiting the alumni clubs in Lon-

don, Brussels, Paris and Oslo. He was about to leave for New York and plans to visit Washington and Dallas before returning to Monterrey. Ben now has a summer home almost beside that of Johnny Davis, II, at Crow Point, and has taken up sailboat racing as an avocation. We recently saw in the Hingham *Journal* of September 7 that his boat *Barbara* had finished third in the four-meter class.

Tom Desmond, I, has recently given \$12,000 to the Harvard Foundation for Advanced Study and Research. This sum is to be used to provide a commons room in the new Graduate Center, commemorating the late Arthur E. Kennelly, Professor of Electrical Engineering from 1902 to 1930. Tom is also the author of an article, "The Promise of Geriatrics," appearing in the June number of *Today's Health*.

Molly has sent us a clipping from the Pittsburgh *Post Gazette* of May 16, containing an obituary of Walter S. Laird, III. He was 63 years old and died of a heart attack. Our records show that Walter had been in Pittsburgh ever since leaving the Institute. In 1914 he founded the Yellow Cab Company and was its president for 31 years. He was also president of the Pittsburgh district of the Parmelee Motor Fuel Company. His health caused him to give up the presidency of the Yellow Cab Company between 1942 and 1947 but he assumed the office again in 1947. He was a member of Duquesne Club and the Oakmont Country Club. He is survived by his wife, Mrs. Margaret Miller Laird, a daughter, Mrs. Margaret L. Anderson, New York City, and one son, William M. Laird, Pittsburgh. He was active in community affairs and devoted much of his leisure time to the two clubs in which he held membership.

It was with somewhat of a shock that we learned of the death of George L. Lawrence, Jr., I, at Boothbay Harbor, Maine, where he had a summer home. Len entered the Institute from Melrose High School and lived in Melrose since that time. For some years after graduating from the Institute he was assistant superintendent of the Boston Rubber Shoe Company. Later he and some associates purchased the Tyer Rubber Company in Andover and he had been with that company ever since, being vice-president at the time of his death. Len had been at Boothbay Harbor since last May. The Review Secretary also has a summer home near Boothbay Harbor and occasionally met Len, but did not realize that he was in poor health this past summer. — PAUL M. WISWALL, *Secretary*, Box 125, Glen Ridge, N.J. CHESTER L. DAWES, *Review Secretary*, Pierce Hall, Harvard University, Cambridge 38, Mass. *Assistant Secretaries*: MAURICE R. SCHARFF, 366 Madison Avenue, New York 17, N.Y.; GEORGE E. WALLIS, 1606 Hinman Avenue, Evanston, Ill.

• 1910 •

Usually the class notes for this issue of The Review are more voluminous than for any other during the year. Considering the amount of material to be written up about our 40th reunion, and having photographs of the members of the Class who attended the reunion, I was certain I

could not impose on The Review for space for such notes. I have, therefore, issued one of those occasional editions of the *M.I.T. Ten* covering the reunion in full, with reproductions of photographs of those attending. A copy of this edition was sent to every member of the Class and should have been received before you read these notes.

It is with sorrow that I have to record the passing of George W. McRae and Harold Arnold. The following is from the New York *Times* of July 17 and August 9. "East Orange, N.J. Word has been received here from Boothbay Harbor, Me. of the death yesterday of George W. McRae of 120 Washington St., this city, former general manager and vice president of the New Jersey Bell Telephone Company. Mr. McRae, who was 65 years old, died at his summer home. Mr. McRae began his career in the telephone industry in 1910, when he entered the engineering department of the American Telephone and Telegraph Company after his graduation from . . . Technology. He served as chief engineer of the Illinois Telephone Company before joining the New York Telephone Co. in 1924 as chief engineer. The next year he was named general manager and placed in charge of the company's operations in New Jersey. Mr. McRae was a member of the American Institute of Electrical Engineers, United States Naval Institute, Newark Chamber of Commerce, New Jersey Historical Society, Newcomen Society of England, New Jersey Audubon Society and the Alumni Association of M.I.T. Surviving are his widow, Mrs. Harriet Bruning McRae, and a son, Colin W. McRae of Short Hills."

"A funeral service will be held tomorrow in Cambridge, Mass. for Harold S. Arnold, technical assistant to the president of the International Nickel Company, Inc., 67 Wall Street, who collapsed and died Monday evening aboard a New Haven Railroad train at the 125th Street Station. He lived at 48 Vine Road, Larchmont, N.Y. Mr. Arnold had been associated with International Nickel since 1914, almost all that time as assistant to Dr. John F. Thompson, now president of the organization. Before joining International Nickel, he was engaged in mining operations in the Southwest and in Mexico. He was a member of the American Institute of Mechanical Engineers, the Mining and Metallurgical Society of America, the American Iron and Steel Institute, the American Society for Testing Materials, the American Chemical Society, the Navy Industrial Association, the American Mining Congress, and the Mining Club of New York. Surviving are his wife, Mrs. Harriet Stuart Arnold; a son, Stuart V. Arnold, and three grandchildren."

A few weeks ago I received a reprint of an article in *Sales Management*, July issue, from Clark Arkell. It is a most interesting history of the Beech-Nut Company of which Clark is now vice-chairman of the board of directors. A few excerpts from this article will give a very interesting history of Clark's activities since graduation. "The legend has prevailed that Bartlett Arkell was Beech-Nut. The fact seems to be that, largely from behind the scenes, Clark Arkell contributed as much

as his father. In common they had only the accidents of blood and Beech-Nut. Perhaps Clark envied his father's prestige and showmanship. Probably he felt that his father had never given him a chance. At any rate he disliked almost everything his father liked. And vice versa. The first impression of the man is bucolic. Because he is not tall, his extra weight makes him look stouter. A shock of hair hangs over his forehead. For that blue tie he might have paid 69¢ (one dollar he says). The things that impressed most were his intensity, and the earnestness in his blue eyes. After Clark Arkell was graduated from M.I.T. in 1910, his father brought him into the business, and then apparently proceeded to forget about him. For 15 years Clark worked on an agricultural project of which his father knew nothing. But more and more as the dapper Bartlett traveled around in his Rolls-Royces, promoting art and music and hams, Clark took over the business. He didn't move to the center of the stage. 'I have to work,' he said, 'in the background, through others. I know what is needed but I can't carry it out.' And yet since 1931 and before he was largely responsible for picking and training the men who built the organization: the catalyst who kept them together, the spark plug who inspired them and the thorn in the side who kept them at it. 'I was and am a perfectionist,' he added. 'Where others might have been content to have things 99 per cent right, I kept after them until they were 100 per cent right.' Clark recalled one time when the company's printing plant turned out \$5,000 worth of imperfect labels. 'Father might have been willing to use them. Fortunately, at that time, he was leaving for Europe. As soon as he was beyond the 12-mile limit I had them destroyed.' — HERBERT S. CLEVERDON, *Secretary*, 120 Tremont Street, Boston 8, Mass.

• 1911 •

All thoughts are now, of course, centered on our 40th reunion down on the Cape Friday, Saturday and Sunday, June 8, 9, 10, and for the climax — Alumni Day at M.I.T. on Monday, June 11. At this mid-September writing, plans are pretty well along and the first mailing will probably have reached you by the time you receive this issue of *The Review*.

Based on our last two reunions — in 1941 and 1946 — we should once again have an attendance over the hundred mark and we're sure every '11 man will try his best not only to be there himself, but also to bring along members of his family — for the 1911 tradition has it that our ladies add measurably to the enjoyment and success of these five-year reunions.

It is indeed with deep regret that we must report the loss of two of our classmates, in the passing of Francis Cooke, XIII, on April 6 and Chet Morey, II, on August 28. Both men met death suddenly — the former at the wheel of his car and the latter at home shortly after a heart attack.

Francis prepared for M.I.T. at Whitman High School in Whitman, Mass., and Boston English High School. He was an active

member of the Naval Architecture Society and did his thesis with Albert Gardner, II, a fellow graduate of Whitman High School. In informing me of his death, Francis' widow wrote: "My husband's health had been failing for a number of years. He died at the wheel of his car on the highway. I was alone with him. I realize full well that I have been lax in not notifying you immediately — I hope you will understand how upset I have been. Thank you for your cheery contacts and rest assured that your letters were greatly appreciated by Francis. He was always loyal to M.I.T."

Chet Morey was born in Cambridge and was a graduate of Rindge Manual Training School. He was an active member of the Mechanical Engineering Society and during our junior year was assistant business manager of *Technique*, 1911. Following graduation he settled in Providence, R.I., and in 1929 became superintendent of the Rhode Island Tool Company there. During World War II he joined the United States Department of Labor as a consulting engineer in 1943 and retired soon after V-J Day and with his family came to Belmont, Mass., to live. He was a former president of Associated Industries of Rhode Island; a member of the American Society of Tool Engineers, Mt. Vernon Lodge, A.F. and A.M. of Providence and was a Shriner. He is survived by his wife, a daughter, Mrs. Cynthia E. Glass and a brother, Harold Morey. Our hearts go out to the bereaved families of Cooke and Morey.

Sara and I were blessed with our sixth grandchild and third grandson on June 7, when our oldest son, Orville B., Jr., and his wife became parents of their second child, Lincoln Copp Denison.

We had eleven classmates and one wife at this year's Alumni Day on June 12. Ralph Vining, III, and his wife came from Baltimore and just nosed out Luis de Florez, II, who flew in with his son, Peter '38, from New York, for coming the greatest distance among our group. Others present were Bill Coburn, XI; George Cumings, VI; Dennie, VI; Tom Haines and Jack Herlihy, II; Morris Omansky, V; Carl Richmond, I; Emmons Whitcomb, X; and Aleck Yereance, I. Monk deFlorez was one of the speakers at the afternoon symposium on "Access to Ideas — Is Reading Obsolete?" and your Secretary, as usual, led the songs and cheers at the banquet that evening in the Copley Plaza Hotel.

The symposium was held in the new Charles Hayden Memorial Library, for which Ralph Walker, IV, and his partners were architects — the last word in library construction. We had three entries in the list of books by Alumni now in the Library's "Tech Collection": *American Etchers*, Volume 5, 1930, John Taylor Arms, IV; *General Kenney Reports*, 1949, General George Kenney, I; *Purposive Behaviour in Animals and Men*, 1932, Ed Tolman, XIV.

In a feature story in the *New York Times* on June 19, tribute was paid George for his fine leadership at the Air University, "which has the mission of providing the young independent Air Force with an officer corps capable of directing

the growth of air power in the world of the future. Under the spur of Gen. George C. Kenney," the article continues, "students at all its institutions look only at what is to come, not at what has been done. When General Kenney says in his directives that he wants his subordinate commanders and their instructors to induce 'global thinking' in the student officers, he means it literally. The students are required to keep constantly before their mind's eye the picture of the world as a globe and not that misleading flat vision of it most of us remember from school-day instruction on Mercator-projection maps."

Last spring, in these class notes, we quoted a newspaper story from the *Baltimore Sun*, telling of the wonderful hobby of Ban Hill, I, "making gadgets," that is being put to such practical use in helping paralytics — children in particular — overcome physical handicaps. Just after our mid-May writing of the notes for the July issue (last of the previous volume), the *Saturday Evening Post*, in its issue of May 20, presented a profusely illustrated article titled: "Escape for Wheel-Chair Prisoners," the opening paragraph of which reads: "Bancroft Hill is a civil engineer and a transportation expert. He is used to big assignments, like raising an 87-ton section of Baltimore's Hanover street bridge an inch and a half with a one-man hydraulic jack. But that achievement brought him considerably less satisfaction than making a gadget that lifts a spoon to the lips of a severely handicapped boy. And guiding the Baltimore Transit Company through nine years of depression and war — he was president from 1936 to 1945 — counts for no more on Mr. Hill's personal balance sheet than designing a steering gear for polio victim Betty Adler's wheel chair." Look this May 20 issue of the *SEP* up at once — it will warm the cockles of your heart to read of Ban's wonderful accomplishments since retirement from active business. In a report to the president of the Women's Board, Children's Hospital, Baltimore, Ban said he hoped his accomplishments would "point out to some of us old engineers a field of interesting work." After reading in the July class notes of the fine recovery that our daughter, Helen Elizabeth (Mrs. Peter Barton), has made following her polio attack in mid-August, 1949, Ban wrote: "In any case after seeing what I have, I am certainly glad to hear about your daughter." We're all proud of you, Ban!

Appointment of Sydney Alling, VI, to the newly created post of general sales manager of the Rochester (N.Y.) Gas and Electric Corporation was announced on June 14. Syd had been manager of industrial and commercial sales, having been with the company ever since graduation. Before joining us in our junior year, Syd was graduated from the University of Rochester.

My congratulatory letter brought double barreled returns — a fine letter from Syd and a requested letter from his fellow-employee of R G and E, Frank Taylor, VI. Syd wrote that "it is questionable whether a person is to be congratulated on having a lot of new duties loaded on to him in his declining years" but during the past year his work has been extremely in-

teresting because R G and E has been going through the process of becoming an independent company.

"Our daughter, Janet," Syd continued, "graduated from the University of Rochester in 1939 and in 1940 married Robert N. Conway. Bob is a graduate of R.P.I., in aeronautical engineering, and since graduation has been located at Langley Field in Virginia. They have three sons and my wife and I manage to visit them or have them come up to see us about once a year. Our son, David, graduated from the University of Rochester and completed two years at the medical school there, but in the summer of 1941 he contracted tuberculosis and was laid up for five years. He was then able to return and finish his course and he received his M.D. in the spring of 1948. He is at present resident physician at Hermann Biggs Memorial Sanitarium at Ithaca, N.Y. He is married and has one daughter.

"I know Clarence Dow, I, very well as he belongs to the Monroe Golf Club where I play occasionally. I did not know Clarence was an '11 man until four years ago when he asked me if I were going back to our 35th reunion. He was a manufacturers' representative, but I think he has turned almost all of the work over to his son and has very nearly retired from business. The Louis Walz, V, you mentioned at nearby Batavia, I have not met. Right now my intentions are good for Marion and me to be with you at the 40th reunion next June. I sincerely hope that nothing turns up in the meantime that will prevent our attendance." A fine letter, Syd and we'll be looking for you and your wife come June 8-10.

"In the first part of 1912 I started work with R G and E in the engineering department," writes Frank Taylor, "and since I joined the company it is 10 times larger — so you see I have seen certain changes in the industry. Later that year a blank Yankee married Carrie Fowle Beckham of Alexandria-Culpepper, Va. We have two children. Mary married Hubert Frankenfeld, a salesman for Durez in Columbus, Ohio. They have two children, Heidi, three years old and Kathryn, seven months old. In World War II Hubert spent five and one-half years in the United States Army, three and one-half of which were spent in Italy with an anti-aircraft battery.

"My son, F. Carter Taylor, Jr., was in the army engineers and was one of the 3,500 engineers selected for the atomic bomb project and was located at Los Alamos. During the war he married a Miss Bode, daughter of the vice-president of Briggs and Stratton, Milwaukee. Carter graduated from Michigan with a degree in chemical engineering and is now in Bay City, Mich., working for Dow Chemical Company on consumers research methods, to find out new uses for Dow products. They have a daughter, two years old. I might say, with due modesty, of course, that both of our children made the National Honor Society and Carter made the various class honor societies and is also a Tau Beta Pi.

"I just happened to recollect that I forgot to say that I have been for some years assistant manager of the industrial department and my hobbies are photography

and gardening — particularly perennials. Why should anybody want to take black and white pictures? I have no use for anything other than Kodachrome (note: Eastman Kodak Company is in Rochester). Also a fine letter, Frank — but you made no mention about planning to attend our June reunion. How about it?

Gordon Wilkes, II, has just had a book published by John Wiley and Sons, Inc., titled *Heat Insulation*, which presents technical and laboratory information on insulating materials. Gordon has been at the Institute continuously since graduation as assistant and instructor in physics, associate professor and professor of industrial physics, and since 1934 as professor of heat engineering. In addition to his teaching, he has been closely connected with the development and application of equipment to determine the effectiveness of heat insulation over a wide range of temperatures. One of the chapters in his book deals with reflective insulation and emissivity determination (–300 degrees F. to 2500 degrees F.) and includes valuable data not available elsewhere. The economy of insulation, covering house insulation as well as commercial insulation, is thoroughly treated in the concluding chapter and throughout the book 129 useful graphs and charts supplement the text.

A five-page booklet entitled *How To Study*, prepared by Art Leary, XI, head of the Hyde Park (Boston) High School mathematics department, and Agnes K. Brennan, director of distributive education and former Hyde Park teacher, was handed to more than 25,000 Boston pupils on opening day, according to the Boston Sunday Herald of September 10. Arthur, who has observed students with furrowed brows at Boston English High, where he taught 18 years, and at Hyde Park High, says: "It's quite a trick to know how to study, so we thought we could help them, especially with their home lessons, with something like this."

A nice letter received this summer from Mark Kinney, IV, in which he said classmates might be interested in the following paragraph under the heading of "Who's New in the Players," which appeared in the summer issue of *The Players Bulletin* of The Players Club, 16 Gramercy Park, New York City: "Mark Curtis Kinney: Although originally a St. Louisian (born Sept. 7, 1887), he was educated at Kenyon College in Gambier, Ohio, and at M.I.T. and lived next door to The Players at the old Technology Club in 1917. During World War I served as lieutenant, R.A.F., in France. Worked with Cass Gilbert for two years on construction of Woolworth Building and was in charge of interior decorating for Wisconsin State Capitol Building. Now president of the J. S. Ringwalt Company and vice-president of the First-Knox National Bank, both in Mount Vernon, Ohio. Get him talking, over his bourbon-on-the-rocks, about his six acres 'Bonnybrook.'"

Due to a "reduction in force" order in mid-June, A. T. Cushing, I, was retired from the position of valuation engineer, United States Department of Agriculture, Production and Marketing Administration, livestock branch, which he had held since December, 1922, in Kansas City, Mo. Im-

mediately he and his son, D. A. Cushing, set up a consulting engineering practice and since July 1 they have been real busy, he writes. His address: 5905 Cherry Street, Kansas City 4, Mo. Best of luck to Cushing and Cushing, consulting engineers!

Helicopters soon may be a common sight in New England skies, busy in industrial and agricultural aviation work, according to Burleigh Cheney, II, president of Eastern States Helicopter Service, Inc., formed in mid-June, succeeding Skyway Corporation, of which Burleigh also was president. This new company will provide special air services to agriculture and forestry in the form of crop dusting and spraying, forest surveys and controls, while for industries the company will provide special courier service to speed emergency deliveries of products and trained personnel, aerial advertising displays, power line and pipe line controls, operating in Rhode Island, Massachusetts, New Hampshire and Connecticut. Company offices are at 2 John Street, Providence, R.I. Best luck for continued success, Burleigh!

Six honorary and 542 degrees in course were awarded at the late June commencement of Northeastern University and President Carl Ell, XI, announced that 90 per cent of the 261 graduates of the college of engineering had already been placed in industry. About the same time, Harold Shaw, II, retired after one year as president of the Leominster Rotary Club; Johnny Bigelow, IV, was re-elected secretary of the Marlboro Rotary Club and your Secretary assumed the presidency of the Gardner Rotary Club for one year. Incidentally, on May 31 it was my privilege and pleasure to be toastmaster at a testimonial honoring Horace Ford, who retired in June as treasurer of the Institute, the 25-Year Club of Institute employees being hosts.

At Alumni Day at Worcester Academy, also in late May, the new gymnasium was dedicated in honor of Fred Daniels, VI, for his services to the school since his graduation in 1905. Fred is president of the trustees. Meanwhile, at about the same time, City Manager John B. Atkinson of Cambridge appointed Stan Lawton, V, to fill a vacancy on the Cambridge Water Commission. Stan, senior partner of Herbert Lawton Company, wool textile agents of Boston and New York, has lived in Cambridge since 1921 and is a director in the Cambridge Trust Company, the Dewey and Almy Chemical Company and has an active interest in the Community Federation, the Red Cross and the Avon Home. Also in Cambridge, Al Wilson, I, president of the A. O. Wilson Structural Steel Company, is now vice-president of the Cambridge Chamber of Commerce.

Class President Don Stevens, II, his wife, Lois, and their son, Carver, took an extended trip through the Northwest and up into Alaska this summer. Don wrote to me from Fort Yukon that the boat trip from Seattle to Seward and thence by Alaska railroad to Fort Yukon was both beautiful and exciting. They report seeing 2,000 migrating caribou in McKinley Park, a great many glaciers and a gold

dredge — Don lifting a \$15,000 gold brick (but putting it down again, of course). The return trip was through Whitehorse, Skagway, Vancouver and Glacier Park. Bob Haslam, X, had an extended business trip to Europe in the late spring and early summer, spending almost four weeks in Italy and Trieste; two in Austria; three in Germany; two in Switzerland and two in France. Then on July first he started his real retirement from his many years of service with Standard Oil of New Jersey by going to Canada for two months of fishing.

Emmons Whitcomb, X, and Reta have sold their house in Arlington Heights and now have a new home at 77 Wood Street, Lexington 73, Mass. Other address changes include: Lester D. Cushman, IV, Apartment 1, 17 Georgian Court, Foster Village, Bergenfield, N.J.; William C. Davis, Jr., I, Seaboard Air Line R. R. Company, 703 S.A.L.R.R. Building, Norfolk 10, Va.; Clarence W. Dow, I, 101 Edgeview Lane, Rochester 18, N.Y.; Warren B. Hopkins, VI, Ballast Lane, Marblehead Neck, Mass.; Harry E. Lake, Codfish Hill, Bethel, Conn.; Walter I. Phillips, 1284 Beacon Street, Brookline 46, Mass.; and Thorne L. Wheeler, Chatham, N.Y.

Just a reminder that our annual "Seven Come Eleven" class dinner at Walker Memorial, M.I.T., will be held on Tuesday evening, November 7th — see you there if you're in this vicinity at that time! — ORVILLE B. DENISON, *Secretary*, Chamber of Commerce, Gardner, Mass. JOHN A. HERLIHY, *Assistant Secretary*, 588 Riverside Avenue, Medford 55, Mass.

• 1912 •

The Class of 1912 made an outstanding record under the leadership of class agent Albion R. Davis with its contributions to the 1949-1950 M.I.T. Alumni Fund. The total amount subscribed, \$5,395.94, was the largest amount received from any class. This was 200 per cent of the class quota, which is also the best record. The number of contributors was 114 per cent of the quota, which was exceeded by only three classes. Davis modestly says: "The credit belongs entirely to the fellows whose individual contributions added up to such a substantial total. As class agent for the Fund I would much rather have had 1912 lead all other classes in the number of contributors instead of in total amount. Am hoping that the added stimulus of the big drive of the Development Program this year will carry over so that next year we will be on top in both classifications. That is where we should be — and can be, too." Let's continue to strive for both goals! Davis also adds: "Being chairman of a nearly two-million dollar junior high school building program here in Wellesley is keeping me quite busy, but it is all extremely interesting. The children today apparently have to have better facilities than you and I had when we were in college. I certainly hope the war situation will not interfere with our construction schedule too seriously."

Hamilton Merrill was elected president of Manning Maxwell and Moore,

Inc., on July 21. He became associated with the valve and gauge manufacturing concern on October 1, 1920, as assistant works manager. He became a vice-president in 1937 and was elected a director last year. In May he was appointed vice-president in charge of the Consolidated-Ashcroft-Hancock division of the company. Our best congratulations! When Lester and Jennie White passed through Detroit on Labor Day, Charles and Olga Tuller came to the hotel for a most pleasant visit. Their daughter, Elizabeth, who received her Ph.D. degree from Iowa State University in June, 1946, was an instructor in chemistry at Wellesley for three years. She is now associate professor at Eastern New Mexico University. The Tullers are now completing the construction of a new home at 1627 Hustonia Avenue, Royal Oak, which they expect to occupy about Thanksgiving time. This embodies their ideas of comfort and convenience with especial reference to the time when Charley retires in the next few years. They will welcome classmates visiting in Detroit.

Benson, Cook, Hunsaker, Jones, Manning, Schell, Shepard, Springall and Stobert attended the Alumni Banquet at the Copley Plaza on June 12, at which affair a splendid time was reported.

Jim Cook writes: "The window decorations of the Lynn Gas and Electric Company for the city centennial included an exhibit of fire-fighting equipment of the horse-drawn era furnished by Lieutenant Lawrence Clark of the Newton Fire Department. Lieutenant Clark is a cousin of Charles Hamlin Carpenter, Snedecor Avenue at Academy, Bayport, L.I. You, of course, recognize Charley as a classmate whom we all enjoyed seeing at East Bay Lodge in 1947. Charley sent, through his cousin, his best regards and a promise to attend the class reunion in 1952. — FREDERICK J. SHEPARD, JR., *Secretary*, 31 Chestnut Street, Boston, Mass. LESTER M. WHITE, *Assistant Secretary*, 4520 Lewiston Road, Niagara Falls, N.Y.

• 1913 •

Fifteen of us attended the Alumni Banquet on June 12: A. L. Brown, Cameron, Capen, Cushing, Flanders, Gentner, Glancy, Gustin, Murdock, Rollason, Nat Sage, Charlotte Sage, Terry, Townsend, Weeks. Very little visiting is possible during this noisy and crowded occasion. However, I was able to piece out the following from Phil Capen, X. Phil had just spent eight weeks living in barracks at East Lansing, Mich., where he took a course in "housekeeping" for government hospitals. Phil's title at Boston Marine Hospital is "executive housekeeper"; he also acts as consultant to the National Public Health Service. In the latter capacity, he recently went to Washington to demonstrate, for a country-wide group of hospitals, how to work out a budget covering personnel and operating expense. Phil took Course X, expecting to add something to the art of making patent leather in his father's Crow Blacking Company at Canton, Mass. He got a setback late in life when patent leather went out of style. Then Phil showed pluck. He

was in the O.P.A. during the war, and afterwards in the Veterans' Administration, in charge of training G.I.'s and disabled veterans, at Harvard and M.I.T. Phil is spry and animated, and pleased that the Course in Chemical Engineering came in handy in his diverse pursuits.

Lester Gustin, I, has proved a shining example of the fruits of "easy does it." A sound student and structural building engineer, he never would tackle a Brooklyn Bridge, but he has coupled an engaging personality with a natural eye for specialties, like steel joists, patented, which do many jobs better and cheaper than wood. Hence, Lester has prospered, raised a fine family and enjoys his writing of poetry and genealogy. John Livingston, X, sends best regards from 16 The Terrace, Plandome, Long Island, N.Y., where he is a practicing consulting chemical engineer. Hildy Carlson, President, New England Aircraft School, Boston, writes: "This, I am ashamed to say, is about my first contribution to the 1913 notes, although you may be sure that they are the first thing I look for when The Review arrives. July 1 the better half and I are taking off from the Boston Airport for Europe where we hope to spend about seven weeks in a leisurely non-conducted tour of the Continent and England. This has been a long time coming since we have been waiting for our four children to grow up to the point that we could leave. My youngest boy Donald just finished his first year at the Institute and is spending this summer at the McClean Hospital. No, he's not a psychopathic case but just working in the maintenance crew. However, I got a big kick out of telling my friends that after one year at the Institute — he goes to McClean Hospital. If you have noticed the increase in tuition you probably expect that the old man needs to go there. Was down in Washington and had a very pleasant visit with General Albert M. Jones last spring. You remember he was captured at Bataan and was a Japanese prisoner during the war. We sent him a wire at our last reunion. When I come back in the fall, I will drop you a line about our trip and some more news on other classmates I expect to see this summer."

Dave Stern, V: "Nothing new to report, except a grandson born last August, Jeffrey Todd Stern. May be a prospect for M.I.T. Who knows?" Ken Franzheim, IV: "The class notes are about the only contact I have left with my old friends of 1913, and needless to say I enjoy reviewing them very much. There is very little to report with reference to my own activities that is particularly interesting, except that I have a home at Altavista #40, Villa Obregon, in Mexico City, where I would like to receive any of the traveling brothers if they are ever in that neighborhood. I manage to get down there from Houston about once every four or five weeks. We are still quite busy in the office here, where we have a staff of approximately 25 persons. This spring, I am going to Havana for a week as an official United States Government representative to the Pan American Congress of Architects. If any of the old gang ever are in Houston, I hope that they will let me know so that I

may have the pleasure of seeing them." Alfred Katz, XI: "I note with regret the passing of my dear wife on October 6. Fortunately, she was survived by her son, Felix, now a sophomore at Rutgers University in the business administration course. Hopefully he will understudy me as vice-president and sales manager of Colloids, Inc., to carry on our expanded program with branches in North Carolina, Canada, Mexico and more recently in Italy."

Holland Wemple, X: "I continue as vice-president and director of the Texas Gulf Sulphur Company and am approaching my 31st year of employment by that firm. Last fall I accepted an appointment to one of the committees for raising funds for M.I.T. development, and in that way I have renewed my acquaintance with a great many Technology men. However, I do not find any of the Class of 1913 on any of the sub-committees, but no doubt they are taking part in other sections of the country. I had a telephone conversation with Cy Crawford, X, recently, and he tells me that there is not sufficient work in this country to keep him occupied, so he is going abroad for two months." Clarence Roe, I, of East Lansing, Mich.: "I am in Ormond Beach, Fla., for this winter, and could have said up to a few days ago that I am basking in the sun, but right now 'It Is Cold Outside.'" Gerry Lane, V: "I have taken on the job as chairman of the Rochester committee to raise funds for the M.I.T. Development Program. This is a real job but I know the money is needed and I could not work for a better cause. My regular position is still assistant manager of the Kodak Park Works, which position I have held for the last three years."

Howard Currier, II, Chief Engineer, Ford Passenger Car Division: "This year has started out with a rush, for me, so I have not had time until recently for any writing. Up to my neck in new models for the Ford car. Have been visiting most of our Ford assembly plants, on a planned schedule basis using one of our company-owned DC-3's for flying, with the same management group included each trip. Everything went reasonably well until we tried to land in Los Angeles a few weeks ago — then we were lucky to be able to "set-down" in an airfield near Ontario, Calif., on account of a heavy fog blanket covering most of the L.A. area. We were at the Somerville plant fairly recently, and it did not seem just right to be going right past the Institute, without even being able to stop in for a look around."

William V. Kemp, XIV, died on March 17, 1948. He was a Williams man, and had been a private consultant in Westport, Conn. — FREDERICK D. MURDOCK, Secretary, Box 788, Pawtucket, R.I.

• 1914 •

Your Assistant Secretary is trying to pinch hit in the absence of your Secretary, who has been doing the world this past summer. However, in his travels around the United States, Rich has seen a great many of the fellows and furnished a good part of these notes. He first went to the West Coast and then returned to his office for a few weeks before leaving for a

three-month trip to Europe and the Mediterranean countries. Part of his trip was to be on the *Excalibur* which was rammed in New York Harbor before he started, so some replanning had to be done at the last minute. He should be able to supply some very interesting items for the next issue. At the time this is being written, he has already covered England, France, the Netherlands, the Scandinavian countries and Switzerland, and was in Italy before visiting Near East cities such as Cairo and Beirut. His notes on his trip to the Pacific Coast are given below.

Your Secretary regrets that it was necessary for him to miss Alumni Day this year, but he had to be on the West Coast at that time. Ernest Crocker reports that a very pleasant gathering was held, but there was no special 1914 meeting. Crocker said that he noted among those present: Mr. and Mrs. Jerry Blakeley, Mr. and Mrs. Gardner Derry, Dean Fales, Professor and Mrs. Hamilton, Mr. and Mrs. Dana Mayo, Phil Morrill, Boggs Morrison, Russell Trufant, and Harold Wilkins, as well as Crocker himself. Most of these people were present for the luncheon and part stayed for the dinner meeting.

Being on the Pacific Coast, however, gave your Secretary a chance to contact some of the '14 men out there. Arthur Todt is in San Francisco and says he is greatly enjoying his engineering work with the Standard Oil Company of California. Fred Barns lives in Burlingame but has a factory for the manufacture of greenhouses in Redwood City. He was most enthusiastic about life on the Pacific Coast and could not be induced to come back to his native East Coast. Matthew Harrison in Oakland said that he had forsaken the electrical engineering work almost immediately on leaving the Institute and has been in the construction business ever since. While on a visit to Stanford University at Palo Alto, your Secretary talked with Franklin C. Fette. He was one of the transfers from another college and accordingly was a little older than the rest of us. He had been out in China for some time, but felt that that area was a good place to avoid at this time.

Lucian Burnham was called on in Los Angeles, and he and Mrs. Burnham gave your Secretary and Mrs. Richmond a true 1914 welcome. Colonel Burnham, it will be recalled, has retired as a colonel in the Marine Corps. Although he was wounded while in the Pacific, fortunately not at all seriously, he cherishes most the certificate presented to him by the people of Londonderry, Ireland, when he was commandant of the Marines stationed there early in the war. With the certificate is displayed the shillelagh that the mayor of that town presented to him. Although Burnham came from Needham, Mass., he, like Barns, feels that the West Coast is the place to retire to. He has a very nice house in Pasadena and spends a good deal of his time looking after a most attractive fruit and flower garden. Don Douglas, at Santa Monica, reports that business is moving along very satisfactorily and he, too, is exceedingly happy about staying on the West Coast. He sent his regards to all

classmates, particularly those associated with him in his early aviation experiments when he was at the Institute.

Carl Sanborn in Los Angeles has been very busy in construction engineering work. His great interest, however, seemed to be in his young granddaughter and grandson. Like Sanborn, Howard Annin's big interest was not in his engineering work but also in his granddaughter and grandson. Your Secretary missed seeing Jim Holmes, as he is on quite an extended absence in connection with a very special project for the government. Jim's engineering business is one of the largest on the Pacific Coast and has a great deal to do with the government's activities in the Pacific. As one of a group of 60 leaders in various fields throughout America, Jim was recently invited to Washington by the Secretary of Defense to confer on problems of national defense.

Ralph Wells of Pasadena was in Long Beach when your Secretary tried to contact him, but he was later reached at his home. Ralph wished to have his good wishes given to all his classmates, and like those already mentioned, Ralph has no desire to return to his native East Coast. Your Secretary hoped to see Thorn Dickinson, as he has on other trips, but Thorn was the engineer in charge of one of Stone and Webster's large power plant projects in the Pacific Coast area and, unfortunately, your Secretary did not have the contact telephone. Other matters prevented him from getting it through the local Stone and Webster office before he had to leave San Francisco.

Tatsuo Furuichi, VI, wrote to Rich recently on a business matter and told of a dinner in Tokyo on June 2 of the M.I.T. Association of Japan, of which he is former president. There were nine M.I.T. graduates (eight Japanese) present, and "a good time was had by all." Furuichi was formerly an admiral in the Japanese Navy. Dean Fales led the procession when the New Hampshire turnpike toll highway was formally opened last June. He drove the first car, with Governor Sherman Adams of New Hampshire in it. The picture in the Portland, Maine, Sunday *Telegram* of June 25 showed a snappy looking job, a Jaguar, with Dean at the wheel and the Governor alongside. Everything high class. Dave Sutherland was in New York in June for a few hours and gave Charlie Fiske a ring. While he still maintains an office at 742 McKnight Building in Minneapolis, his new home address is Lafayette — E.F.A., Two Harbors, Minn., where he has built himself a chateau.

In the vital statistics column, we have two marriages to record — both daughters of Ross Dickson. Enid was married at Webster, Mass., on November 11, 1949, to John R. Vilett, son of Everett W. Vilett '22. He is a graduate of Nichols College. Nancy was married at Elizabeth, N.J., on August 5, 1950, to William A. Boylan, a graduate of Drake University and Harvard Law School.

Henry L. Gardner, XIII, has a new address at 302 Houston Street, Coalinga, Calif. — In recent changes at the State Mutual Life Assurance Company at Worcester, Mass., Arthur W. Johnson, II,

was elected secretary and will also continue as chairman of the planning board. He has been with State Mutual since 1930. His picture — a good one, by the way — appeared on the front page of the Worcester paper. The New York *Herald Tribune* carried the news a short while ago that Paul Revere Smith was retiring on August 1. He was assistant to the general manager of United States Lines, with which he had been for the past 25 years. During World War I, Paul was a lieutenant in the Coast Guard Engineer Corps, and he spent five and a half years in the Navy in World War II, rising from lieutenant commander to captain.

A letter from Walter Monahan reached us too late for the last issue, inquiring about a repeat performance of the reunion held a year ago last June at Pine Orchard. At that time everybody enjoyed it so much that there was talk of one this year, but not enough were able to go when the time came to decide. Walter was just back from a five-month trip to Colombia, South America, where he had a pleasant time. He took movies at the last reunion which he had edited by now (we hope) and he will be glad to show them the next time the fellows gather. — O. C. Hall sent in a note saying that Herman Affel had been on a three-week trip to Key West in connection with the laying of a new submarine coaxial cable with submerged repeaters. The unique feature of these telephone cables is building the amplifiers right into the structure itself and supplying the power for the vacuum tubes along the same coaxial conductors which carry the voice.

We hardly need to remind you (though it seems repetition does help) that news of what you are doing or have done is of interest to all of us. There are times when impulses should be repressed and a "get thee behind me" attitude taken, but writing to your Secretary isn't one of them. Get the idea? He will appreciate it no end. And we know you will, also, when you read the notes about others. — H. B. RICHMOND, *Secretary*, 275 Massachusetts Avenue, Cambridge 39. ROSS H. DICKSON, *Assistant Secretary*, 126 Morristown Road, Elizabeth, N.J.

• 1915 •

The best reunion we've ever had! That's the consensus of these 62 classmates who were at our 35th reunion, June 9 to June 11, at Coonamessett Ranch, Cape Cod: Allen Abrams, Philip Alger, Herbert Anderson, Lawrence Bailey, Joseph Ball, Henning Berg, William Brackett, Wayne Bradley, Theodore Brown, Whittemore Brown, Everett Coldwell, Alton Cook, Alan Dana, Marshall Dalton, Carl Dunn, Chauncey Durkee, Samuel Eisenberg, Newell Foster, Otto Hilbert, Eben Hill, Gabe Hilton, Thomas Huff, Loring Hayward, Abraham Hamburg (David Hamburg, son), John Homan, Weare Howlett, Kenneth Johnson, Parry Keller, Clive Lacy, Bernard Landers, Ernest Loveland, Joseph Livermore, Henry Marion, Azel Mack, William McEwen, Archibald Morrison, P. J. Munn, Francis Murphy, Harry Murphy, Charles Norton, James Neal, John O'Brien, Har-

old Pickering, Tower Piza, Waldo Pike, Eugene Place, Louis Quirk, George Rooney, Chester Runels, Albert Sampson, Henry Sheils, William Spencer, Wilbur Swain, Edward Sullivan, James Tobey, Eastman Weaver, Herbert Whitcomb, Edmund Whiting, Charles Williams, Max Woythaler, Louis Young.

Long-distance honors were shared by Joseph Ball and Henning Berg from California; Allen Abrams, Rothschild, Wis., and Carl Dunn, Chicago, were close seconds. Most of the men arrived on Friday with the balance coming on Saturday in time for the class picture which shows a good-looking though slightly aging group. Golf, fishing, swimming, bridge, and just sitting around, all led up to our big Saturday night dinner, after which Alan Dana (in Speed Swift's absence) showed movies of earlier reunions, and Pete Munn entertained us with a hilarious show of magic and parlor tricks. Famous for its camaraderie and unselfishness, 1915 has never had anyone seeking personal credit. But I do feel that the committeemen who gave so willingly and generously of their time, interest, effort and own expenses to assure the outstanding success of our reunion deserve recognition with applause and acclaim.

First, the "underwriters" — classmates and friends of 1915, who by their generous contributions made it possible to run the party with so many top features at such a low individual cost. Then, Ben Neal and his "loot" — at the Saturday night dinner Ben gave out a collection of attractive and valuable take-home souvenirs: Household waxed paper, Allen Abrams of Marathon Corporation; Herb Anderson, knitted Hi-Jacs and a beautifully knitted cardinal and grey tie with 1T5 embroidered on it, The Brinton Company; household friction tape, Alan Dana; gaily-colored rubber bands, Max Woythaler and Weare Howlett of Hodgman Rubber Company; knife sharpening stones, George Easter, Electric Refractories and Alloys Corporation; plastic ice bucket, Jac Sindler, Spirit, Inc.; Vent-Alarm whistles, Frank Scully of Scully Signal Company Inc.; magnetic pin boxes, Ben Neal, Norton Laboratories, Inc.; Gillette Blue Blades, Louie Young of Gillette Safety Razor Company; Polaroid driving glasses, Ercell Teeson, American Optical Company. It was an armful of goods to carry away and Ben did a grand job of handing it out. Incidentally, due to unavoidable delays, Jac Sindler's plastic bucket, George Easter's sharpening stone and Herb Anderson's knitted Hi-Jacs will be mailed to you later.

Next, the geographical key men who aroused and followed up our widely scattered classmates: Herb Anderson, Brute Crowell, Carl Dunn, Gabe Hilton, Bill Holway, Dave Hughes, Hank Marion, Vince Maconi, Clyde MacKenzie, Parry Keller, Laurie Geer, Bill Spencer, and Ray Stringfield. Then, the general committee in Boston: Max Woythaler and Weare Howlett for the excellent and outstanding job they did in locating Coonamessett and making all the arrangements and the splendid "deal" for the place; Wally Pike, cocktail party; Barbara and Virginia Thomas, secretarial help; Abe

Hamburg and Larry Landers, printing and mailing; Frank Murphy and Sam Eisenberg, transportation; Fanny Freeman, art work on our signs; Chet Runels and Reggie Foster, games, cards and dice; Charlie Norton, the watchdog and policeman on finance; Frank Scully and Clive Lacy, entertainment; Archie Morrison and George Rooney, golf; Johnnie O'Brien and Al Sampson, emergencies — and, then, that stalwart, reliable, indefatigable pair, without whom no secretary could run a reunion, the pride of Course I — Henry Sheils and Pirate Rooney.

Comes now the highlight of the whole reunion. Upon our return to Boston on Monday, we had a cocktail party for the ladies at the Copley-Plaza Hotel, preceding the Alumni Banquet. This was in charge of Barbara and Virginia Thomas and Wally Pike. It was beyond description, the finest party the Class has ever had, with more and more wives, daughters, sons and friends visiting it became a very gay get-together. Gifts to the ladies of Toni wave sets from Louie Young, Gillette Safety Razor Company and Polaroid driving glasses from Ercell Teeson, American Optical Company, almost caused a stampede. Orchids ordered by the committee, unfortunately, arrived too late for the party. This brought the reunion to a happy, gay and enjoyable end; and to Barbara, Virginia and Wally go our very highest praise and deepest thanks for the work and interest they put into making this such a grand party for us all.

Attending the Alumni Banquet after our cocktail party were: Allen Abrams, Herbert Anderson, Lawrence Bailey, Joseph Ball, Henning Berg, Everett Coldwell, Marshall Dalton, Carl Dunn, Donald Fowle, Osborn Freeman, Gabe Hilton, Parry Keller, Bernard Landers, Henry Marion, William McEwen, Archibald Morrison, Waldo Pike, Mary Plummer Rice, William B. Spencer, Wilbur Swain, Herbert Swift, Eastman Weaver, Edmund Whiting, Max Woythaler. This was an excellent showing for 1915. I'd like to have seen Mary Plummer Rice but I was surfeited with last minute duties upstairs at the cocktail party. It was wonderful to see Ken Johnson, Norwich, Conn., and Hen Berg, San Francisco, for their first class reunion. They became the life of the party and I just know we can count on them at all future reunions. "Let their lights so shine" and some of you other classmates plan to be at our 40th in 1955.

From all this you can easily see what a wonderful reunion we had and how happy it was for us to be together again to renew and enjoy these fine old friendships. From the many telephone calls and letters enthusing over the reunion here are a few: Parry Keller, University Club, Fir Hill, Akron 4, Ohio, writes: "Had a wonderful time at our reunion on the Cape and in my opinion it was the most successful 1915 reunion. You could not have selected a better spot than Coonamessett Ranch Inn. You and the committee (including Barbara and Virginia) who found the place and made all reunion arrangements did a superlative job and deserve credit of all the Class. Certainly was a labor of love on their part. You request

that I send you any reunion pictures I have and which might be used for a showing in Boston. Wally Pike and I did a great deal of snapping, some of it quite candid, each using Kodachrome color film in Bantam cameras. Wally and I decided to pool our pictures. This kind of partnership will cover the reunion in color quite well. Suggest you telephone Wally and if he had the same luck as I, you might make an interesting showing at a class luncheon. My two pictures of a golf lesson demonstrated by one Azel Mack came out pretty well. I have been living a very simple and peaceful life in Akron since returning from the reunion and my New England vacation." Their pictures are great, and anyone who wants to borrow them may write to Wally Pike, 120 Tremont Street, Boston 8, Mass. Be sure to return them. They are transparent slides which will require a projector and screen to show. Parry supplemented that letter with this one to Wally, and I shall listen for your wisecracks anent that last paragraph. Nuf ced! "About a week ago I mailed to you 18 duplicate color slides of pictures I took at our reunion. In looking over the pictures I was impressed principally by the ease and grace with which our classmates could relax and do nothing. I was really amazed with the physical activity of our versatile Secretary as illustrated by his gyrations with a golf club. I did not think he had it in him. The most strenuous physical exercise in which I had seen him indulge heretofore was the lifting of a knife and fork. I think all the Class should be proud of him."

Al Sampson writes: "Just a line to congratulate you on the splendid job you and the boys did on the reunion. It was the best ever and everything was 'tops.' I thought the gang looked very healthy and husky for a group beginning to turn the cards for the sixth lap in the 'rat-race' of life. Let's hope 10 years from now when the seventh comes up they will all be here." Jim Tobey, now retired to Sunset Hill, Newtown, Conn., where he busies himself with writing, lecturing, radio, research and public health, including articles in the July and August *American Mercury*, writes: "Thank you for sending me the picture of the shining and well scrubbed, if somewhat wrinkled and careworn faces of our classmates who were at Coonamessett. It was a splendid occasion, very enjoyable and nicely managed. You can address me as grandpa once again, as my son's wife had her third child, a daughter named Priscilla, on July 31. That makes four all together, since my daughter had a boy last December. If it had not been for those auspicious events I might now be writing you from Korea, as the Army mildly suggested to me last January that they could use me for a year or so in Japan. I was not enthused at the time, but may get into the fray yet, despite my advanced age and high rank. It will be all right with me. I have about four years to go before retirement and the bucolic life of a country gentleman has kept me pretty vigorous." How about that modest reference to his "high rank." Remember Jim in those old drill days at the Armory?

Regrets came from chaps we'd like to

have seen there. Despite this cable from Paris, France: "SORRY CANNOT ATTEND REUNION LONG LIVE CLASS OF NINETEEN FIFTEEN," Abe Hamburg made the reunion and brought his son, David, whom we were all glad to see. — Bowman S. Atkins, 9917 Rogart Road, Silver Springs, Md., wrote to Bill Spencer: "This is to thank you for jogging me on the '15 reunion; it was most deeply appreciated. Needless to say, I would dearly love to go — and may yet get there. My work has been such that I have been unable to make any definite commitment. Should I not make it I wish to send greetings to all my former classmates and particularly to the following whose names still linger in my poor memory: Gene Place, Donald Belcher, Joe Livermore, Howard Calder, Gino Maconi and Henry Niemann. In the line of personal history I have been largely engaged in the building construction and contracting industry and for the last 34 years have been under the influence and guidance of a most charming wife, Camille Bernadette Frecynet. We have three married children and present bookkeeping shows six and one-half grandchildren. I am an estimator with the contracting firm of Davis Wick Rosengarten Company, 613 15th Street, N.W., Washington, D.C. (beside the Treasury Building). Telephone: Metropolitan 3577. Needless to say, I would be delighted to wine and dine any 'visiting firemen' and renew old acquaintances either at the office or at our nearby home in Maryland."

Ken King, recently retired: "Have been waiting till the last minute to see if there was some possible way of attending the reunion, but it now appears hopeless. We have sold our home in Wilmington and have to be out of it by June 12 which means we are moving on June 10. Will have to wait for our 40th. Since my retirement last June, after more than 30 years with the Du Pont Company, I have been developing a farm I have owned for some time near Traverse City, Mich. The farm is located in the lake region so I farm when the fish don't bite, which is a good part of the time. Spent six weeks out there this spring and had a grand time. Go back after we get moved for the rest of the summer. Wilmington will still be our home; but as we intend to travel quite a bit in the wintertime, we will move into an apartment which will be much easier to close up and open than a big house. Hope you have a fine reunion. Give all the old gang my best and I most sincerely hope I can make the next one!"

Speed Swift, enmeshed too busily with his many political and social activities: "For some time now I have seen the handwriting on the wall, but always I have refused to recognize it as such. At least not until now. I shall be unable to go to the reunion. However, I surely do plan to attend the cocktail party and all the other activities of June 12. Am sending to Coonamessett Ranch by express, addressed to you, the class movies. Many things, not just one thing, have been piling up to keep me from being away for the long period of the reunion on the Cape." — These '15 men still get around. Clive Lacy spent two months after the

reunion in England, Scotland and Wales with his family and from Aberdeen he sent me a picturesque card: "You should be able to get some more stories here." You know what he means!

And Marco Polo Jerry Coldwell is at it again. From the Darband Hotel, Tehran, Iran, Jerry's letter of August 6 reached us on August 11, a remarkable delivery: "This trip, which I have been dodging for a year or so, finally caught up with me. I was told that the heat here was about like Phoenix, Ariz., but that it was dry. Not so. I think you and your committee staged a fine reunion and I'm glad that this time I was able to be there in person as well as in spirit which had happened at our 25th and 30th."

More reunion letters: Henning J. Berg, 2335 Laguna Street, San Francisco, Calif., writes: "Back at the old grind again so the 1950 reunion is just a pleasant memory. It was a grand time. My pictures at the Cape during the reunion turned out very well and have shown them a number of times." It was swell to see you again, Hen, and we'll be looking for you in 1955. — A fine note from Jack Dalton: "A reading of the 10th annual report of the Alumni Fund for 1949-1950 prompts this note. The report indicates that the total contributions of 1915 men since the fund started in 1940 — \$34,535.46 (this does not include any Development Fund contributions) — exceeds those of all but five of all the classes to graduate since M.I.T. started. I also add with pride and appreciation that 98 of our classmates have now contributed a total of more than \$86,000 to the Development Fund and I confidently expect that to exceed \$100,000 before the campaign ends." It gives the Class of 1915 a proud feeling to have Jack Dalton as general chairman of the Committee on Financing Development. Many thanks, Jack, and we were all very glad to have you with us at the reunion and cocktail party.

Another class wedding: Doug McMurtree's daughter, Marguerite Lempereur, was married to Thomas Robert Bean, lieutenant, U.S.A.F., on July 21 at Gorham, N.H. Congratulations from the Class of 1915 to these young people. My young friend, Jack Mohr '50, whom many of you remember at our Boston class dinners, was married to Jean Frances Field (Wellesley, 1949) on September 1, at Caldwell, N.J. This M.I.T.-Wellesley romance must be a reminder to Gene and Ruth Place, Clive and Mona Lacy, and possibly some other '15 men who wooed and won at Wellesley. Jack has a fine job at Corning Glass Company. He and his bride will live in Corning, N.Y., where Otto and Helen Hilbert, as further evidence of that splendid 1915 spirit, have already welcomed them. All the best to Jack and Jean from 1915.

It now becomes very hard for me to close these cheerful notes with the sad news of a heavy blow to our Class. Little Andy is gone. At just about the time Andy was preparing to come to the reunion he died suddenly of a heart attack in Livingston, N.Y. At his funeral in Andover, Mass., on May 19, Henry, George and I attended to represent 1915. From those early freshman days to our graduation

and through all these years Andy stood out in our Class, well known, well liked, and well remembered. He attended every big reunion and whenever he was near, he came to the New York and Boston class dinners. Always a regular and generous supporter of the Alumni Fund, and the Class, Andy did his share for 1915 and M.I.T. We can never forget Little Andy. Our sympathy goes out to his widow, Alice. — AZEL W. MACK, *Secretary*, 40 St. Paul Street, Brookline 46, Mass.

• 1916 •

As is always the case in the first issue of the fall season, some of the news is a little old; nevertheless, realizing that this column is the only means of contact with classmates for many of us, we feel that you will appreciate any news item whether we have just received it or have been holding it for some time.

First of all, Alumni Day of last spring was again a very enjoyable day and among those present were Joe Barker, Steve Berke, Clint Carpenter, Bud Kaula, Shatswell Ober, Dave Patten, Hen Shepard, Hy Ullian, Don Webster, Duke Wellington and Johnny Woods. While on the subject of Alumni Day, it seems appropriate that we should once again remind you of the reunion dates, June 8, 9 and 10, 1951. No stone is being left unturned in order to guarantee the biggest and best reunion possible. Whether or not our efforts have been successful will to a great extent be measured by the number of those present at this banner event. There will be more information on this function appearing in this column at a later date. In the meantime, make your arrangements now so that you will not miss what we hope will be the time of your life.

Although many of us were not aware of it, we came very close to losing one of our buddies, Irving McDaniel, to another class. Mac wrote early this summer that he was very disgruntled over the way the column of another class was reporting on his activities inasmuch as he did not have and did not want any connection with that class. By this time, Mac has no doubt been pleased to hear that this matter has been remedied and that the "hands off" sign has been hung in the proper places. To give you an idea of Mac's feelings toward the Class of '16, we quote a portion of his recent letter: "I could write pages and still not adequately express my feelings towards '16, and with the passing of each year these feelings grow stronger and stronger. It has become a religion with me." Mac took the opportunity in his recent letter to let us know that he planned to be present at the reunion next year. We'll be looking forward to having you with us, Mac.

We received many newspaper clippings; one from Cambridge, Mass., had this to say: "Prof. Gordon M. Fair, 7 Scott St., Gordon McKay professor of sanitary engineering at Harvard University since 1935, has been appointed a member of the Cambridge Water Board. A native of the Union of South Africa, Prof. Fair is a graduate of M.I.T., Class of 1916, has studied in Berlin, and has won additional degrees at Harvard and Tufts College. A resident of Cambridge for many years, he has

served as dean of the faculty of engineering at Harvard since 1946. Following World War I, during which he served in the armed forces, he became assistant director of the Sanitation League of the International Red Cross at Geneva. A member of the National Resources Planning Board from 1938 to 1943, when he served as water consultant, he has been a member of the commission on sanitary engineering of the National Research Council since 1942. During World War II, Prof. Fair acted as a procurement officer and sanitary engineer for the War Manpower Commission and later, from 1945 to 1948, served as Scientific Director of the International Health Division of the Rockefeller Foundation. A member of the American Society of Civil Engineers, the American Academy of Arts and Sciences and the American Water Works Association of which he has been chairman of the Sanitary Engineering Division since 1947. His work in connection with water and sewerage engineering won him the Dexter Brackett Memorial Medal in 1942."

Then, a New Bedford, Mass., paper carried this item: "After heading the ECA mission in Portugal since October 1948, David L. Patten of South Duxbury has returned to the U.S. Though declining to comment on his tour of duty in Portugal before reporting in at Washington, Mr. Patten said he did not expect to resume ECA direction in that country. A former investment banker, Mr. Patten was appointed to the Portugal post October 7, 1948 by ECA Administrator Paul G. Hoffman. He married the former Mrs. Dorothy Dendall Russell, widow of General Clinton Russell, at Potomaska, South Dartmouth, in 1945." We received this clipping from a Hartford, Conn., newspaper: "Frank D. Ross, vice president of the Factory Insurance Association, has accepted the Hartford chairmanship of the Cerebral Palsy drive. Mr. Ross, a graduate of MIT and past state and New England golf champion, is the president of the Wampanoag Country Club. In accepting the chairmanship for Hartford, Mr. Ross said that he has felt keenly about the cerebral palsy problem and hopes that the campaign in Hartford to raise \$40,000 will not only reach its goal financially, but will, in the process, educate the community to its responsibility toward the cerebral palsy victim. Children with cerebral palsy, he continued, have been neglected for years due to the disinterest of the public at large, which has resulted in a lack of specially trained medical personnel to diagnose and treat the affliction and facilities to care for and train its victims so that they may grow to become useful, independent citizens."

From a Los Angeles paper, we picked up the following: "Alfred S. Nibecker Jr. of Pasadena, architect for the Los Angeles Board of Education, was among 27 distinguished members advanced to fellowships in the American Institute of Architects at the organization's annual convention recently in Washington, D.C. Nibecker was honored for his public service contributions in insisting that local architects be employed for designing of local school buildings. A native of Spokane, Ni-

becker attended Polytechnic High School in Los Angeles, and . . . Technology." Finally, a Worcester, Mass., paper carried this item: "Rev. Dr. Raymond B. Blakney, who was supported by the Bethany and Hadwen Park Congregational Churches, Worcester, as missionary in the Orient for three years, has been named president of Olivet College. The Worcester churches supported Rev. Dr. Blakney as a teacher and minister at a Congregational missionary school at Peiping, China, in 1947 and 1948 and as a missionary in the Philippine Islands in 1949. Previously he taught mathematics and physics at Kukien Christian University, Foochow, China between 1921 and 1928. During World War II, he served as a chaplain in Europe and later in China. He was discharged with the rank of major. Rev. Dr. Blakney is a graduate of MIT and Boston University School of Theology."

We received another short note from Dick Berger, this time thanking us for the publicity in the June issue. He also enclosed reading material on cancer which was very informative. The following excerpt from an article in the Summit, N.J., *Herald* of April 13, 1950, proves that we are not alone in being proud of Dick for the wonderful work he has been doing: "Mr. Richard G. Berger, a Research Chemist of Bridgeport, Conn., has since 1937 performed a great public service by publishing, at his own expense, many bulletins on the causes and prevention of cancer." — Vert Young sent us a copy of the *Third Progress Report* of the Louisiana Forestry Commission of which he is chairman. Vert is the executive vice-president of the Gaylord Container Corporation in Bogalusa, La., but still manages to find enough time to be chairman of this commission and to the extent that Louisiana has one of the best, if not the best, conservation and reforestation programs in the nation.

We had a nice letter from Horace Burnham which we quote below: "Since receiving your letter of January 5, inquiring about what I have been doing since 1916, I have spent considerable time wondering just what I have been doing since then. My mirror tells me it must have been a tough time but my diary doesn't speak of any continued round of successes. After winning World War I, I moved out into Detroit to help Henry Ford make tractors and found he already knew a lot more about them than I did and could get along very well without me. History has shown that I was right. However, I stayed there long enough to acquire some experience, a few copies of the 'Daily Worker' and a wife. The call of New England was pretty strong, so I returned here and started a career in the engineering and inspection department of a liability insurance company. Hence, I now find myself labeled as senior engineer in the Boston office of the Hartford Accident and Indemnity Company. As for hobbies, I try to make myself believe that mowing a lawn, shoveling a driveway and a dozen other necessary jobs that have to be done around a place, are interesting hobbies. However, between these things and keeping up and trying to get to a cottage in Maine I manage to spend any spare time. Brother, is this a

thumbnail sketch. Perhaps you can make something of it." We think it is a pretty nice "sketch" of your activities and would only be too glad to receive more of the same from the other members of the Class. As much as we would like to be able to fill this column with news that we "pulled out of a hat," we can't do it; we must have letters, and more letters from every member of the Class.

We had a welcome note from Carl G. Whitaker, who says he hasn't forwarded any information relative to his activities since leaving M.I.T. simply because he felt there was nothing of any consequence to write. But we all like to hear where others are located, and every bit helps our little column. He writes: "After leaving M.I.T., I went into business with my father. We build things whenever the opportunity presents itself. Except for a short interlude from the spring of 1917 to 1919, during which time I was in the Army, I have been right here on the job in the same place ever since. I am still building things. I am just completing a new hotel for Bar Harbor." Carl's address is: 122 Cottage Street, Bar Harbor, Maine.

We have a nice long letter from John Hood giving us an account of what has gone on since the old days in Boston. His letter makes interesting reading so we haven't cut it at all but are reproducing it here just as John gave it to us. "My allergy to submitting notes about myself for The Review has been overcome by your several and persistent letters. Except for 18 months in the Army during World War I, two years as chemist in a paper mill, and a very unprofitable year during the 1930 depression, my time has been about equally divided working either in well-known textile mills or for chemical manufacturers supplying the mills with materials needed in textile processing. My mill experiences have been very interesting and have had to do with plant and laboratory problems pertaining to the weaving, bleaching, dyeing, printing and finishing of cotton, wool and rayon fabrics. With the chemical manufacturers my work has been along technical service and development lines. I am now completing my 18th year in the textile chemicals laboratory at the Stamford research laboratories of the American Cyanamid Company. My older daughter, Tacy, attended Colby College in Maine for two years and then was graduated from the University of Connecticut. She married E. Dean Finney, a graduate of Washington and Lee University, and they are now residing in St. Johnsbury, Vt., where Dean is part owner of radio station WTWN. My younger daughter, Claire, was graduated from the University of Connecticut and for the past year has been trying to earn her own living. She lives at home, commutes to Bridgeport, and is doing social work for the state division of child welfare. She has a family of 90 children living in foster homes to look after and enjoys the work. My wife and I reside on Hendrie Lane, Riverside, Conn., which is part of Greenwich, and we would be glad to see '16 men at any time. My hobbies consist of singing in a church choir, singing in the Stamford Male Cho-

rus, which some of you may have heard on the Paul Whiteman Hour, acting as the crew on a boat owned and skippered by a friend, and taking an active part in the affairs of the Men's Club of the First Congregational Church of Old Greenwich, of which the past month I became president emeritus, having just completed three years in office. It was a privilege and pleasure to be able to introduce as my first speaker our classmate, Robert E. Wilson. A number of Technology men from this vicinity were present to hear his excellent address on the subject 'Our Future Oil Supplies.'"

Joe Barker has been appointed a member of the advisory committee of the Chase National Bank's Grand Central branch.

The following item appeared in the magazine *Industrial Quality Control*, May 1950: "The Shewhart Medal Committee has announced that Mr. Harold F. Dodge of the Bell Telephone Laboratories, New York City, has been unanimously selected as the Shewhart Medallist for 1949. The ceremony of medal presentation and Mr. Dodge's address will be the highlights of the Society's Annual Convention Dinner Meeting at Milwaukee on June 1. Mr. Dodge is a Fellow of the Society, a member of the Society's Editorial Board, and Chairman of the ASQC Standards Committee. Prior to his joining the Western Electric Company in 1917, Mr. Dodge was an instructor at . . . Technology. From 1925 to date, he has served as Quality Results Engineer of the Bell Telephone Laboratories. During the recent war, Mr. Dodge served with distinction as Consultant to the Secretary of War on Quality Control and Sampling Procedures." The citation for this award reads as follows: "The 1949 Shewhart Medal is awarded to Harold F. Dodge in recognition of his many original contributions to the art of statistical quality control, his pioneer achievements in scientific sampling inspection, and his leadership in the development of quality control standards for industry. These contributions have exerted a deep and stimulating influence on the founding and growth of quality control as a new engineering profession."

Here's one we like, from Howard Foster: "Your latest appeal for paragraphs for inclusion in the 1916 class notes has temporarily overcome my aversion to writing personal items of an autobiographical nature. Therefore, and briefly: After enjoying many years in the exploration end of the oil business, I found another interesting vocation, during the war, as an aircraft stress analyst and am now engaged in the structural design of cargo and passenger ships and the development of special freight handling equipment. (*Quantum mutatus ab illo!*) Trusting that I have demonstrated the superlative value of the Course in Sanitary Engineering as given by M.I.T., I am Very Truly Yours." You see, we even have classmates who know Latin.

Once again, remember how much your letters mean to us and also remember to reserve those big dates, June 8, 9 and 10 of 1951. — RALPH A. FLETCHER, Secretary, Post Office Box 71, West Chelmsford, Mass. HAROLD F. DODGE, Assistant

Secretary, Bell Telephone Laboratories, 463 West Street, New York 14, N.Y.

• 1917 •

Among those representing 1917 on Alumni Day at the Institute last June were Paul Bertelson, Dick Loengard, Ray Stevens, Ken Childs, Ray Blanchard, Ken Bell, Clarence Holt, Bill Dennen and son, Art Dickson, Walt Whitman, Sherry O'Brien, Rudy Beaver, Tubby Strout, Stan Hyde, Bill McAdams, Ted Bernard, Stan Dunning, Irving Crosby, Lobby Lobdell, Al Lunn, and, we underline, Art Knight. Art's nose was not among those counted in these notes last year, and we are glad to make up for it by calling your special attention to his presence this June. Lobby and Al Lunn were at the head table during the banquet, in spite of Lobby's having lost his Panama hat in the course of the preprandial ceremonies. *The Lady or the Tiger* and the *Unfinished Symphony* are unresolved mysteries in connection with the Saga of Lobby's hat.

Rear Admiral William Mack Angas, U.S.N., has retired from the Navy, where he held the position of director of the Atlantic division, Bureau of Yards and Docks, and has accepted the chairmanship of the civil engineering department of Princeton University. During World War II, he was known to thousands of Seabees as the officer in charge, Third Naval Construction Brigade, and head of the Seventh Fleet construction forces. He supervised the construction of naval bases in the Pacific area.

The news has been received of the death of Walter G. Farr on April 10, 1950.

Alfred J. Ferretti has been appointed chairman of the department of mechanical engineering at Northeastern University in Boston. — Alvah Moody has moved again, this time from Fritch, Texas, to Minneola, Kansas, Post Office Box Y. — Joe Littlefield has been elected president of the M.I.T. Club of New York.

Barnett Dodge, professor of chemical engineering at Yale, was given a celebration dinner this past June to mark his 25 years on the faculty of the university. During the war Barney was for some time an official investigator with the National Defense Research Council and later worked for the Manhattan Project at Oak Ridge. He is known as an expert on industrial waste disposal and an authority on the thermodynamics of fluids at high pressure.

A rumor of Sully's death got around during the summer doldrums. None of the reporters knew whether it had happened in the Philippines or Japan, whether with boots on or boots off. The rumor cropped up on such good authority however that your secretaries decided to undertake a cautious inquiry at the horse's mouth. Answer, via Western Union: "Report of Sully's death slightly exaggerated. Tom (Meloy) and Sully."

A more cheerful summer rumor had it that Stan Hyde was about to accept the principalship of the newly planned regional junior-senior high school in Cornish, Maine. An inquiry brought a letter from Stan, and we quote: "It is true that I have accepted the position as principal of Cornish, Maine,

High School, and it is also true that the superintendent of that Union which includes several of the 'burned out' areas has plans for a consolidated high school for the region . . . my interest in the problem and the way in which it is being attacked by the town of Cornish is the chief motivating factor in my acceptance. . . . This summer we are in the process of moving in two directions from the house we have lived in the past 23 years, some of our goods and chattels coming to the winterized house at Popham which Lobdell and Bill Rivers will remember as being in the process of alteration when they were there, some going to Cornish, when, as and if the rent becomes available, and much being carted to the dump or flung to the secondhand man. . . . All in all it is a busy summer, and we wind it up busily too, for we close here Labor Day, daughter Nancy is to be married on September 2, to John B. Wilbur, Jr., '50, and school opens September 5. Yes, I have read *Father of the Bride*."

Both Ray Stevens and Lobby have moved to the new apartment at 100 Memorial Drive, Cambridge, during construction known as "Eastgate." The building has made an impression on the Memorial Drive skyline; its apartments are beautifully planned, the center of attraction in each being the view over the river toward Boston.

Herman L. Rogers married Mrs. Lucy Fury Wann on August 3 in Cannes. The Duke and Duchess of Windsor were witnesses at the wedding. Herman's first wife, the former Katharine Moore, died in May, 1949.

Ken Bell recently discussed leather versus synthetics over radio station WEEL in Boston. — Erling Stockmann has accepted the presidency of Arnessen Electric Company, Inc., in New York City. — Colonel Joe (J. Worthen) Proctor expected to return to the United States this summer from three years with the Army in Frankfurt, Germany.

Al Lunn joined the Kendall Company, manufacturers of textile specialties, on September 1 to serve as vice-president and director of manufacturing. Al resigned as vice-president of Dewey and Almy Chemical Company of Cambridge, where he has been since 1929, to take on the new appointment.

The late July issue of *Life* carried a series of full color photographs of recent acquisitions by the country's leading art museums. The William Rockhill Nelson Gallery of Art of Kansas City displayed what, to your Secretary, was the most attractive and impressive of the lot — and its attraction was not reduced by the presence among the art objects of Paul Gardner, the director. Except for a slight graying of the hair, Paul looks even healthier and better than when he was last seen a few years ago in the Boston area.

Lobby has returned from his trip to Europe but there has been no opportunity for a proper interview. His experiences will be reported next month.

"Tourtellotte for Senator" may be a mouthful, but candidate Janet, Neal Tourtellotte's wife, retorted that "if they can elect a Hickenlooper in Iowa they

should be able to elect a Tourtellotte in Washington." Under the slogan "Janet for Janet," she showed some of the old politicians how to win votes and influence people even though her present try was not successful. To open her campaign Janet took simultaneous time on the 15 major radio stations in the Puget Sound area: when Janet was on the air that night it was impossible to listen to anything else! Mr. Tourtellotte also waged an active political campaign as candidate for a first husband of a United States Senator. We hope their next attempt will really land them in Congress! — RAYMOND STEVENS, Secretary, 30 Memorial Drive, Cambridge 42, Mass. FREDERICK BERNARD, Assistant Secretary, 24 Federal Street, Boston 10, Mass.

• 1918 •

This will start off, at least, as a father and son's issue. The younger generation has entered the well-established Berman Radio Company this year to carry on the tradition of top-quality merchandise and top-quality service which has marked this concern's long history. New in the business are George and Ralph Berman, sons of Eli, founder and partner in the concern with his brother, Leo. Leo's son Richard, and Eli's son-in-law, Howard Arbetter, also now are associated with the family business. Radio engineers since 1918, with 25 years' continuous service in radio, refrigeration and electrical appliances, the Berman Radio Company has five stores: 20 Stuart Street and 485 Washington Street in Boston; 419 Main Street, Malden; 527 Massachusetts Avenue, Cambridge; and 71 Market Street, Lynn. At all these stores are found the latest models of leading television lines, as well as thoroughly equipped service shops. Of the new associates in the business, George and Ralph Berman, like their father, are graduates of the Institute. Richard Berman and Arbetter are Harvard men.

Now let us turn from Eli to Yale. Over a quarter of a century ago, way back in 1920 to be exact, another electrical engineering graduate was working for the Edison Power Company somewhere in Pennsylvania. Yale Evelev was parceling out repair and maintenance jobs. He was young, but youth is the time to ask questions of the future. Where was he going and how fast? Not so far, and with the haste of a glacier, he thought. So, he resigned his position and launched out on his own, starting with the modest assignment of wiring a house. From that has now come an organization with headquarters in Reading, Pa., but with stores and offices in Philadelphia, Allentown, and a place I can't remember, as well as Reading. The Keystone Engineering Company will repair your toaster or install the bus bars in your superpower plant. Yale's two sons are learning the business the easy way. Still there are problems. All those years back, the payroll was \$75 a week, and sometimes Yale had to pawn the office typewriter to raise the last few dollars. Now the payroll is over \$10,000 a week, which means you go to the bank instead of the pawnbroker, and your Royal isn't enough security. "When I see the boys making a mistake," Yale said, "I just laugh

and say nothing." Maybe he has a better pedagogical method than the profs in P.E.E. So far, Yale has no Harvard son-in-law, but not to be outdone by the Bermans, Evelev is in charge of the Reading fund-raising effort for the Harvard Engineering School.

Warren J. Scott, Director of the Bureau of Sanitary Engineering of the Connecticut State Department of Health, spoke at Danbury last spring on "Sewage Problems and the Need for Local Regulation." All the neighboring sons of Chic Sales were present. Warren has been with the department now for 27 years, and has acquired something of a reputation. A survey, conducted by his department and local health officers, of the need for changes in Newtown is nearly complete. The survey analyses for contamination of the Housatonic River and its tributaries, includes the Pomperaug and Pootatuck rivers, and extending as far back in Newtown as Hawley Pond, and the brook then flows into it from near the head of Newtown's Main Street. It is expected that the result of this work will substantiate the need for a sanitary code for the entire town of Newtown. The code would merely require approval of sanitary arrangements for all new construction and thus protect the owner as well as adjacent property owners, and the best interests of the town itself.

George Ekwall's chemical engineering courses turned out to have an Episcopal valence. So it came about that on June 14 a reception was held in Fales House of Christ Church in Waltham commemorating the 20th anniversary of Reverend and Mrs. Ekwall's services to the parish. During World War I, George went to Plattsburg and served for a time in the Army as a second lieutenant of infantry. He was associated with the Hood Rubber Company in Watertown as a chemical engineer from 1919 to 1926. He then decided to study for the ministry, and entered the Episcopal Theological School at Cambridge, from which he was graduated cum laude in 1929. While at the theological school, for the first two years, he was lay assistant to Reverend Francis E. Webster at the local church. Then he was ordained as deacon, and continued as assistant during his senior year at the seminary.

In addition to the regular round of duties, a clergyman usually participates in three ceremonies of personal significance in the lives of most of us. These take place in connection with birth, marriage, and death. In May, Virgil Jorgensen required the final service. He was a retired San Francisco architect, older than most of us (61), and died of a heart attack at his El Verano ranch home in the Valley of the Moon, where for the last 20 years he has raised prize dairy cattle. — GRETCHEN A. PALMER, Secretary, The Thomas School, The Wilson Road, Rowayton, Conn.

• 1919 •

Aubrey Ames writes: "At present I am president of Western Audograph, Inc., a distributorship for dictating machines by the name of Audograph for seven western states, with head office at San Francisco. My retirement from Standard Oil lasted two years, which I find is about the usual

period of retirement for men who retire for other reasons than ill health or advanced age." Wayland S. Bailey has been named an associate professor of mechanical engineering at the Norwich University, Northfield, Vt. by Perley D. Baker, Dean. The class began on September 20 when the military college opened its 132d academic year. For the past seven years he was a member of the Faculty at M.I.T. Colonel William H. Bassett, Jr., is with the 8th Army in Japan in charge of procurement.

Leo E. Beaulieu writes that he is still in the electrical contracting, automatic heating and electric appliance business at the same location and the same moderate success. Thomas H. Bott, Jr., writes: "General chairman of the four day affair celebrating the 175th anniversary of the sailing of the *Hannah* from Beverly, Mass. — the birthplace of the Navy — on September 5, 1775. The *Hannah* was the first ship of the United States Navy." Benjamin H. Bristol writes: "Business for good instruments expanding. Expect to fly to England to look over the company's operations and maybe do a little boating on the Thames."

F. J. Given attended the symposium, "Improved Quality Electronic Components" held at the United States Department of the Interior auditorium, Washington, D.C. While in Washington, he met classmate Joseph Kaufman and had an interesting session. Robert P. Hackett, Vice-president and treasurer of Nichols and Company, Inc., wool topmaker, has resigned and is retiring from active business. A good many of us boys surely envy Bob and wish him the best in his loafing days. John L. Riegel has been recently made chairman of the board of the Riegel Textile Corporation according to the August 4 issue of the *New York Times*.

Alexis R. Wiren has put out a new "brain child" — the *Office Workers' Manual*, which booklet has been very favorably received throughout the country. A copy can be procured by writing direct to him at 393 Seventh Avenue, New York 1, N.Y. — EUGENE R. SMOLEY, *Secretary*, The Lummus Company, 385 Madison Avenue, New York 17, N.Y. ALAN G. RICHARDS, *Assistant Secretary*, Dewey and Almy Chemical Company, 62 Whittemore Avenue, Cambridge 40, Mass.

• 1920 •

At this late date I shall not attempt to give an account of our very successful 30th reunion last June. Those present, some 66 in number, undoubtedly still retain vivid and happy memories of the occasion. Those unable or unwilling to attend missed a mighty good time and an opportunity that arises once in five years to renew association with a wonderfully fine group of individuals. As time goes on, these occasions seem to us to be increasingly enjoyable and worth while and every classmate ought to make a real effort to be on hand. The quality of the Class is evidenced not only by the reunion but by the souvenir booklet which was presented at the reunion and later mailed to all classmates not attending. If any reader of these notes did not receive one, now is the time to ask for a copy as there are only a few remaining.

The Class was well represented at

Alumni Day immediately following the reunion. Twenty-six classmates were there during the day or during the banquet. One or two reunion incidents will serve to point up the reunion. There was, of course, the prize awarded to Jack Nolen for looking more like he did as an undergraduate than any of the rest of us. The prize was the key to Room 14. There was the boat trip on the Sound, organized by Fred Britton; the tennis, actually participated in by Ev Freeman and Al Burke; the singing of all Tech Show songs led by Flossie Fogler Buckland who knew all the lyrics; the pre-cocktail party; aquatic exhibition by Flossie and George Dandrow.

I must tell this one on George. At the final dinner on Sunday, a very good roast beef dinner, the head waitress came around for dessert orders, whereupon George remarked, "I'll have another dinner." The head waitress replied blushing, "You've had it." "Haddock!" said George in that amiable bellow that can be heard for blocks, "I don't want haddock, I want roast beef."

George Manning has been appointed acting head of the Department of Naval Architecture and Marine Engineering at M.I.T. He will take over the administrative duties of Ned Cochrane who is on leave of absence from the Institute to serve a presidential appointment as chairman of the Federal Maritime Board and Maritime Administrator. — One of our valued co-eds, Valborg Aschehoug, the one who referred to me as "our aging Secretary," has recently been heard from. She is with the research laboratory of the Norwegian Canning Industry at Stavanger, Norway, and is in charge of the bacteriological and biological departments. She is president of a branch of the Norwegian Chemical Society and has authored some 41 publications in scientific periodicals in her field.

Mal Lees was a member of a mission to Cuba this summer sponsored by the International Bank for Reconstruction and Development. Mal is an advisor on private capital resources, finance and investment for the First Boston Corporation. Art Atwater is now in Houston, Texas, address 2021 Southgate. Fred Hopkinson is in Rochester, New York, address, 10 San Raphael Drive. Bill Nelson has left Detroit and is in Minneapolis, address 504 Cedar Avenue. Dave Reed has left Cohasset and is in Walpole, N.H. Bill Drumme of Duffill and Drummy, architectural engineers, has had a great deal to do with the designing of the three-million-dollar Corbet Hill housing project near Boston. Bill was formerly state director of Federal Housing, chairman of the Boston Transit Commission and head of the Boston School Buildings Department.

Ken Akers has been made general agent of the National Fire Insurance Company of Hartford with offices in Boston. He is also currently serving as president of the New England Insurance Exchange. Murray Whitaker is with the Parnell Fish Company in Mayport, Fla. Chester Priest is in Nashua, N.H. Ed Rolle has left New York and is in San Diego, Calif. Bruce Steele has left New York and is in Burlington, Vt. Pete Ash is with the New York Rubber Corporation, 100 Park Avenue,

New York. He is the proud grandfather of Charles F. Ash, 3d. born last May 16. Ben West of Tampa, Fla., recently explored deepest Africa and had many interesting adventures there. He has a daughter four years old.

Two of our distinguished classmates and reunionists have appeared in the news recently. Flossie Fogler got prominent mention in a General Electric publication under the heading, "Flirtations With Flossie." The article states that her services as head of the GE's consulting service on heat transfer problems are nothing short of spectacular and mentions that she is in the upper echelon of both the A.I.E.E. and the A.S.M.E. The article speaks in glowing terms of Flossie's personal characteristics, and we need not mention them as we are happily familiar with them. Also in connection with GE, this time as the featured picture and personality in an advertisement was Professor Harold Bibber, head of Union College's electrical engineering department. I wish all of you could see the picture of Harold working a GE Load Visualizer and with a blackboard full of complex equations as a background.

Austin Higgins is probably in Japan by this time, if not in Korea. Austin says that since 1942 he has visited no less than 42 foreign lands. He disputes Larry Hitchcock's claim to having the Class Baby. Austin's oldest son was born on January 8, 1921, and he asks if anyone can beat that. Word has been received of the death of Adelard J. Fortin in New Bedford, Mass., where he had been in the retail business as a merchant for the past 25 years. — HAROLD BUGBEE, *Secretary*, 7 Dartmouth Street, Winchester, Mass.

• 1921 •

Just seven months from now to the big event of the coming year, our 30th reunion on Friday, Saturday, Sunday and Monday, June 8 to 11, 1951. The locale will be that of our memorable 10th reunion, the very adequately equipped Sheldon House in Pine Orchard, Conn. We will conclude the festivities by going back to Technology for the Alumni Day events. You have received the details in Mel Jenney's mailed first announcement. Hope you have replied and returned the completed questionnaire by now. Please do so at once, if for any reason you have not already answered, and help Chairman Irv Jakobson and his reunion committee to follow through promptly on their schedule for the best reunion we have ever had. Jake and Mel, together with Mich Bawden, Chick Kurth, Jack Rule, Ed Steffian and Ray St. Laurent, have met and corresponded for a considerable length of time to set up the place, dates and an unusually enjoyable program. Tell them you will be present to take part in the fun. Whatever your decision, your Secretary will greatly appreciate receipt of the questionnaire. Do it now, please!

For the 30th time, we have the pleasant opportunity to greet and welcome you to another year of these monthly interim reunions. We invite you to send in your news as well as items on others in order to make the record as complete as possible by next June.

Fifty-three persons, including 40 mem-

bers of the Class, were on hand last June for our participation in Alumni Day. So far as we can recall, this is the largest 1921 group to meet at Cambridge in a non-reunion year. As always, the high spot was the informal afternoon gathering of the clan just prior to the banquet, at which Saul and Mrs. Silverstein were gracious hosts. In the absence of Bob Miller, our photo-historian, Chick Kurth had our movies and slides on tap, with additions from last year. Helier and Graciela Rodriguez of Havana attended for the fifth consecutive year but lost the long-distance record this time to Harry and Catharine Field of Honolulu, who brought along their two sons, Harry and John. Harry, Helier and Bill Sherry distinguished themselves with brilliant oratory at the dinner given by President Jim Killian '26 at the Brae Burn Country Club for Honorary Secretaries and officers of alumni groups, which was also attended by Irv Jakobson, Murray Jones, Lark Randall and your Secretary. Jack Rule served as a member of the Alumni Day committee for the afternoon symposium on graphic arts.

Registered for Alumni Day were Mich and Mrs. Bawden, Larry Chellis, Cac Clarke, Larry and Mrs. Conant, Josh and Mrs. Crosby, Ed and Mrs. Delany, Chick Dube, Harry and Mrs. Field and sons, Harry Goodman, Jack Healy, Roy Hersum, Irv Jakobson, Mel Jenney, Murray Jones, Joe Kaufman, Chick Kurth, Ted McArn, Ed and Mrs. MacDonald, Dick McKay, Charlie MacKinnon, Leo Mann, Joe Morrell, Don Morse, Vic Phaneuf, Ken Preston, Lark Randall, Bill Ready, Herb and Mrs. Reinhard, Antonio and Mrs. Rodriguez, Ace Rood, Harry Rosenfield, Ray and Mrs. St. Laurent, Ed Schwarz, Bill Sherry, Saul and Mrs. Silverstein, Ed Steffian, Bill Wald, Al and Mrs. Wechsler, Dave Wheatland, Frank Whelan.

The appointment of Charles F. Baish, a colonel in the Corps of Engineers, to be professor of Military Science and Tactics in charge of the department at Technology, increases the 1921 representation on the Corporation and Faculty to six. Warrie Norton is a member of the Corporation, Jack Rule is professor of Drawing and Descriptive Geometry, in charge of the Section of Graphics and also head of Course IX, Ed Schwarz is professor of Textile Technology in charge of the department, Walter Fife is associate professor of Structural Engineering and Vic Homberg is emeritus professor of Physical Metallurgy. Before his assignment to the Institute, Colonel Baish was chief of the manpower branch on the faculty of the Industrial College of the Armed Forces. In the last war, he commanded the 42d Engineer General Service Regiment and also had charge of construction in the Alaska Defense Command, receiving the Commendation Ribbon. He attended the Catholic University, was graduated from the United States Military Academy and received his bachelor's degree in Course I in 1921. He is a graduate of the Army Engineer School and the Army Industrial College and has held a number of teaching assignments at West Point and the Fort Belvoir Engineer School.

Dugie Jackson, Jr., and his son, D. C. Jackson, 3d, '40, attended the dedication of the Dugald Caleb Jackson Room at the Institute. On behalf of the Class, we extend sincere good wishes to "Uncle Horace" Ford, who was elected a life member of the Corporation on his retirement July 1 after 36 years as the Institute's chief financial officer. The annual issue of "A Technology Bookshelf" lists among books by Alumni in the Charles Hayden Memorial Library collection the works of Edgar Hume, Paul Johnston, John Lee, Walt Sadler, Ed Schwarz and Dave Woodbury. The library requests information and copies of books and pamphlets by members of the Class.

Thanks to our industrious Class Agent, Lark Randall, the 10th annual report of the Alumni Fund Board, of which Warrie Norton is a member, lists the Class as eighth of the 61 class groups reported in the total amount given to the Institute since the Fund started in 1940. This advance over last year, when we were listed as ninth, reflects your loyal support. For the year just completed, 104 per cent of our quota of contributors gave 82 per cent of our quota of the total amount. The monthly "M.I.T. Development Program News" has pictures of Jack Barriger, who heads a committee in the Chicago district; Bill Sherry, Vice-chairman of the Tulsa district and a speaker at the April meeting in Cambridge; Ray St. Laurent in the committee group inspecting the new Charles Hayden Memorial Library.

Welcome calls recently came from Harold Bixby and Bill Rose. Bix was on his way from his home in the Virgin Islands to Ethiopia. He has retired from the Army with the rank of colonel, after serving the Signal Corps in various capacities here and abroad ever since our graduation. Bill is an officer and production head of the Charles F. Abbott Company, East Orange, N.J., manufacturers. Richard H. Morris is with the Technical Publishing Company in Chicago and John H. Driggs is on the staff of the Veterans Administration Hospital at Long Beach, Calif. Ernie Gordon has returned from Bolivia and is now in El Paso, Texas. Fred Rowell reports moving from Plymouth to Osterville, Mass. Richard C. Poole has a new home in Mt. Vernon, N.Y., Ed Farrand, Chicago Honorary Secretary and polo enthusiast, has supplied a Kenilworth, Ill., home address. Bob Haskel is now living in Needham, Mass. Bill Hainsworth has left Scarsdale for an apartment in New York City. Holland L. Robb, a colonel, Corps of Engineers, has a new assignment in Pittsburgh. Archie Mock is reported to be in San Francisco. New addresses have been received for Abraham M. Aronson, James J. Birnie, Warren K. Brimblecom, Philip W. Clark, Norman D. Connors, Harold H. Finley, Hunter E. Gardner, James LeGrand, John R. Oliver, Harry M. Ramsay, Harold F. Stose, Louis D. Striebel, Raphael Van Neste, Harry B. White, Francis T. Whitworth.

In a letter mailed from Jamaica, B.W.I., Herb DeStaebler, Vice-president of Lambert Pharmacal Company, says: "I was delighted to have Fred Dadmun drop in on me. Fred is special representative for Panellit, Inc., 7212 N. Clark Street, Chi-

cago 26, Ill. In case the 1929 Secretary is running short of notes, I saw Juan Mayoral '29 in Ponce and ran into him and his wife later at the Caribe in San Juan. He is just fine and has a lovely wife and three darling girls." (1929 please copy.) Herb didn't explain how he solved the problem of attending the M.I.T. commencement for the graduation of Herb, Jr., last June on the same day that Stephen graduated from high school in Kirkwood, Mo. Among the graduates, young Herb was on the Dean's List as was Bill McGorum's son, Bill, Jr. In the Class of 1952, Mel Jenney's son, Richard, and Bob Lurie, son of the late Joe Lurie, are continuing on the Dean's List in the top honors sections.

Joe Kaufman, President of J. G. Kaufman Company, now has one of Boston's most modern electrical appliance, radio, record and television stores at 26 Province Street, according to the Boston Post. Special decorations, lighting, air conditioning and unique displays represent the last word in design and there is a new device which permits a customer to compare as many as 20 television sets simultaneously. Joe says: "Come in and see me some time," and adds that his son, David, is in his sophomore year at Brandeis University.

It is with heavy heart that we report the loss of two classmates. Fred Engels Kowarsky died on August 1, 1950, at the plant of the Union Chemical Corporation, Newark, N.J., lacquer manufacturers, of which he was president. Born in Yonkers, N.Y., on July 8, 1898, his studies at New York University were interrupted by Army service in World War I, after which he entered the Institute in our junior year and received his bachelor's degree in Course X. Subsequently, he was chief chemist for Squibb and Company and the Miner, Edgar Company before establishing his own organization. He was a former officer of the M.I.T. Club of Northern New Jersey and held membership in the American Legion, the New York Paint and Varnish Club, the Jewish League of his home town of Caldwell, N.J., and the B'nai B'rith. Surviving are his wife and a brother, Edward, of Miami Beach, Fla., to whom we express sincere sympathy on behalf of the Class. Joe Wenick, who assisted in the preparation of these notes, writes: "He had a host of friends and customers who, together with many Alumni, will surely miss him. He was a credit to the Institute and to his profession."

The Alumni Office advises that notice has been received of the death in Phoenix, Ariz., of Michael Vasilievitch Sacharoff, Course II, formerly of Beverly, Mass. No further details are available.

Why not share your Thanksgiving with your reunion committee — answer Mel's letter and return that completed questionnaire now. — CAROLE A. CLARKE, Secretary, International Standard Trading Corporation, 67 Broad Street, New York 4, N.Y.

• 1922 •

Here we go again with our 30th reunion practically around the corner. The members of the Class have been very expert in keeping out of trouble, or at least

they don't appear in the press very often, for the amount of news picked up over the summer has been distinctly limited. However, there are a few items which may be of interest. Northeastern University awarded the honorary degree of doctor of science to Crawford H. Greenewalt on June 25 at Symphony Hall, Boston. The citation accompanying the award was as follows: "Brilliant research chemist, guiding genius in developing a huge program for the discovery of new materials, your scientific imagination and creative leadership have placed you at the head of the far-flung activities of a great industrial enterprise and have established you in the forefront of technological progress."

Larry Coddling has rejoined the ranks of married men. The New York *Herald Tribune* reports that on July 29 Larry was married to Maria Louise Wolfs of Glen Ridge, N.J., in the First Methodist Church of that town. Larry's wife is a graduate of Wellesley and was a lieutenant (j.g.) in the Waves during the last war. They are leaving for Athens where Larry will be electrical engineer for a power program. Frederick J. Guerin has been appointed assistant professor of chemistry at Merrimac College, Andover, Mass. Dr. Guerin previously taught at Boston College and until recently has been associated with the Western Electric Company as research chemist. William C. Gilman on June 1 was elected president and a director of the Florida Power Corporation. Gilman began his career with the General Electric Company, then joined Central Hudson Gas and Electric Company, followed by a period with Carolina Power and Light Company. In 1928 he was head of the Utility Investment department of the Equitable Life Assurance Society, and in 1935 became director of the Public Utility division of the Securities and Exchange Commission. In 1937 he established the consulting engineering firm of W. C. Gilman and Company. During the last 10 years he has worked in the Florida Power Corporation Properties which he now heads.

Professor Joseph H. Keenan of Technology's Mechanical Engineering Department has been awarded a Fulbright grant for a period of six months to serve as a visiting lecturer in engineering in England. Professor Keenan, who is chairman of the First Massachusetts Chapter of the Atlantic Union Committee, has accepted the invitation of the University of Cambridge and the Imperial College of Science and Technology in London to divide his time between these two institutions in the period between January and August, 1951. Robert H. Brown, executive engineer of Parks-Cramer Company, Fitchburg, Mass., was elected, last June, to the board of directors of the American Society for Testing Materials. Brown has been with Parks-Cramer Company since his graduation. His research work there has dealt mainly with air conditioning and industrial humidifying problems. William R. Scott of Stratfield, Conn., was elected last June to be the town meeting representative from his district. Scott is engineer of the Foreign Sales division of Remington Arms Company, Inc. His other activities include membership in the

Stratfield Republican Club of which he is chairman of the public relations committee. He is a member of the University Club, the Brooklawn Country Club and the Council on Foreign Relations of New York City.

Rev. Burton G. Robbins has assumed the pastorate of the Merrimacport (Mass.) Methodist Church, coming there from the Methodist Church of Exeter, N.H. Robbins, in addition to this new position, is also pastor of the Amesbury (Mass.) Methodist Church. Fred Blackall's daughter, Marilyn White Blackall, became engaged last June to Kenneth Gray Wheeler, son of Mr. and Mrs. John W. Wheeler, Jr., of Fairfield, Conn. Miss Blackall is a member of the Providence Junior League and was graduated from the Mary C. Wheeler School in 1945 and from House in the Pines Junior College in 1948. John F. Pierce is an engineer consultant in Boston and is vice-president of the Boston chapter of the National Office Management Association. Your Secretary has formed a partnership with Cedric W. Porter, (who, while not an M.I.T. man, nevertheless is a good New Englander, having gone to Dartmouth and Harvard Law School) under the firm name of Heard, Smith, Porter and Chittick, to continue the practice of patent, trade-mark, copyright, antitrust and federal regulation law. Porter was for many years associated with the firm of Dike, Calver and Gray, while your Secretary has likewise been with Messrs. Heard and Smith since the middle 30's.

The following members of the Class were on hand for Alumni Day last June: Dave Abrahams, Harold Berry, Bob Brown, Yard Chittick, Stewie Dimmick, Dick Downing, Buck Eacker, Warren Ferguson, Whit Ferguson, Dewey Godard, John Goodnow, Clate Grover, Oscar Horovitz, Frank Houghton, Bill Huger, Joe Keenan, Walt Lennon, Bill Mueser, Gus Munning, Randy Myer, Marjorie Pierce, Win Potter, Art Rogers, Slim Robertson, Hyman Rosengard, Tom Shepherd, Ros Sherbrooke, Hugh Shirey, Bob Tonon, John Vaupel and Frank Wing. If we missed anyone, our apologies!

NEW ADDRESSES: Harold A. Stockbridge, 52 Liberty Avenue, West Somerville, Mass.; Colonel Dabney H. Maury, 580 Pershing Avenue, San Antonio, Texas; Charles C. Bray, 4147 Western Avenue, Western Springs, Ill.; Henry M. Schley, 6 Old Lane, Scarsdale, N.Y.; George R. Hopkins, 6441 Dahlonaga Road, Washington 16, D.C.; Alan C. Johnston, in care of P. L. Wheeler, West Boxford, Mass.; Henry R. Tomlinson, 52 Oakes Road, Framingham, Mass. James L. Truslow, 58 Highland Street, Cambridge, Mass. — C. YARDLEY CHITTICK, Secretary, 77 Franklin Street, Boston 10, Mass. WHITWORTH FERGUSON, Assistant Secretary, 333 Ellicott Street, Buffalo 3, N.Y.

• 1923 •

Hugh S. Ferguson was chairman of the Alumni Day observance on June 12 1950, at which the 75th anniversary of the Alumni Association was celebrated. Members of the Class registered on Alumni Day were the following: Benjamin Al-

bert, Horatio Bond, Ronald D. Brown, John E. Burchard, Channing P. Clapp, Hugh S. Ferguson, Joseph Fleischer, Harold B. Golding, William B. Greenough, Jr., E. Louis Greenblatt, Earle A. Griswold, Franklin K. Haven, Robert E. Hendrie, George A. Johnson, Egon E. Kattwinkel, Elliot P. Knight, Raymond M. Meekins, H. C. L. Miller, Harold C. Pearson, Miles Pennybacker, James A. Pennypacker, Bernard E. Proctor, Percival S. Rice, Dunbar L. Shanklin, David W. Skinner, Angelos A. Spilios, Julius A. Stratton, Roy P. Wagner and John H. Zimmerman. Messrs. Bond, Burchard, Clapp, Griswold, Haven, Kattwinkel, Pearson and Spilios were accompanied by their wives.

In accordance with the new class constitution, a short meeting of the Class was held prior to the Alumni Banquet at the Copley Plaza. Jack Zimmerman, our new Vice-president, presided and a committee consisting of Dave Skinner and Bill Greenough were appointed to line up a place for the 30th reunion. It is necessary to sign up desirable reunion places well in advance because of the competition of various M.I.T. and other college classes on the reunion dates. — The Class of 1923 shows up pretty well in the annual Alumni Fund Report which Chick Kane '24 released in the summer. On total fund giving since the start of the fund in 1940 we are well ahead of our contemporaries and only the Classes of '97 and '05 have given more. It will be interesting to see what the class record in connection with the Development Campaign will be which is superseding the Alumni Fund for the current year.

J. W. Voelcker is president of the new M.I.T. Club of Great Britain, which club was host to H. E. Lobdell '17, Executive Vice-president of the Alumni Association, at a luncheon at the Imperial College on July 14.

During the summer, I have received announcements from two members of the Class on the marriage of daughters. Mr. and Mrs. Forrest Graves Harmon announced the marriage of their daughter Marin to Charles Lewis Spencer on June 3 at San Marino, Calif. Mr. and Mrs. William Lyman Stewart, Jr., of Los Angeles, announced the marriage of their daughter Margaret Ann to Jackson Conner on August 12 at Las Vegas, Nev.

Frank S. Archer is with the Canadian Locomotive Company, Ltd., at Kingston, Ontario. He has been a technical test engineer and has traveled for the company on material control operations over a period of 10 years. In May, Fairbanks Morse and Company of Chicago were seeking a substantial stock interest in that company and plan to enter Diesel locomotive production in Canada. Mr. and Mrs. Archer have three children. The oldest is a daughter, Mary Jane, who was married after graduation from Winthrop College in South Carolina. There are two sons, Robert, 21 and David 11. Robert is with the Northern Electric Company in Winnipeg.

Twenty-five-year wedding anniversaries of two members of the Class have received recognition in their local newspapers on the same date, June 29. That of

Mr. and Mrs. Elliot P. Knight was in the Newburyport, Mass., *News*, the account mentioning that most of the original wedding party was present at the anniversary. The Cambridge, Mass., *Chronicle and Sun* recorded the 25th wedding anniversary of Mr. and Mrs. Edward Danehy. Eddie is assistant superintendent of schools and Mrs. Danehy is the former Josephine Lynch, sister of former Mayor John D. Lynch. The Danehys have three children: John L., of the University Trust Company staff; Thomas W., a student at the Massachusetts College of Pharmacy; and Eugenia F., a student at St. John's High School.

The Pilot (Boston official Catholic weekly) recorded on May 27 that James C. Walton of Newton Center had been appointed by Archbishop Cushing to serve as the chairman of the Diocesan Committee on Scouting. Walton's interest in scouting has been of long standing and he was awarded the Silver Beaver honor of the Boy Scouts of America in 1946. — Robert C. Sprague was elected president of the Radio Manufacturers' Association of America in Chicago on June 8. He founded the Sprague Specialties Company in Quincy in 1926 which moved to North Adams in 1930 and later became the Sprague Electric Company. Sprague's home is in Williamstown, Mass. He and Mrs. Sprague have two children: Robert C. Jr., associated with him in the company; and John L. Sprague, a student at Princeton University; and two grandchildren. — HORATIO L. BOND, *Secretary*, National Fire Protection Association, 60 Batterymarch Street, Boston 10, Mass. HOWARD F. RUSSELL, *Assistant Secretary*, Improved Risk Mutuals, South Broadway, White Plains, N.Y.

• 1924 •

NEW CITIZENS: To President and Mrs. George E. Parker, a daughter, Marlowe, on August 17; their fifth girl. To Professor and Mrs. Martin J. Buerger on September 3, Patricia Anne; their sixth daughter. To ex-Major and Mrs. Samuel Shulits, on July 22, a son, Walter William. To Mr. and Mrs. William H. Correale, on March 11, a son, Carl Pellikan. The new arrival's older brother is now with the United States Air Force. To Mr. and Mrs. Paul J. Cardinal, a tottering crown. How's that for a way to start off the year's record of a class 26 years after graduation?

NEW CONSTRUCTION: Your classmates are doing quite a job of facelifting in New York. We've already mentioned some of them on the UN job. Now Bill Correale is doing a job of engineering economics on the New York thoroughway. And Bill Delehanty is architect and engineer for a big Burlington Mills building which is practically a '24 job throughout. Ed Winingar is putting it up, Tom Bundy is keeping the offices apart with his partitions and Nate Schooler is taking care of the toilet end of things.

Down in Louisiana a couple more are doing their best to bring the blessings of civilization to the Deep South. As chief electrical engineer for Barnard and Burk, consulting engineers, in Baton Rouge, Sam Helfman is working to extend the natural gas systems. From here it looks as

though he's trying to cut down his future business. And Frank Reeves, with the same outfit, is building a steam-electric power plant for the city of Lafayette, La. Frank, a native of New England, seems sold on the country. His letter was full of azaleas and year-round green lawns, and he enclosed a beautiful Kodachrome reproduction of Huey Long's statue!

NEW ADDRESSES: Charlie Stodter — Colonel C. S., that is — has had a recent change of address. From the Pacific to the Pentagon Building. While Charlie was coming in, Frank Knight was going out. He started in Washington with the Bureau of Standards way back in 1930, can now be reached at General Delivery, Key West, Fla. Don't know whether this is retirement or whether the B. of S. is standardizing the charter-fishing business. Two of our Chinese classmates have shown up. Last reports had Te-Chih Wang in Chungking, but now he turns up in New York as the representative of the Szechuen Animal By-Products Company. And Joe Young made it, just as he said he would, presumably with his wife and all five daughters. He's now in Greenville, Miss.

NEW BUSINESS: Warren Hill, ex-tooth-brush king, has gone back to work again after a winter spent lolling on southern beaches. He's now vice-president and general manager of Shellmar Products, Mt. Vernon, Ohio, "in charge of sales and production of package material conversion plants," says the release. And if you don't know what that means write Warren, not your Secretary. Maybe this doesn't come under the head of new businesses, but it's close enough. Bowdoin is establishing an ROTC program this fall, and who do you think is heading it? None other than Lieutenant Colonel Walter H. Kennett. That is he was as of last June. Whether he's still there or not is open to question. And Sam Shulits who stopped being a bachelor in September, 1949, (and who became a family man in short order as note above) is seriously considering going back to school too. He wants to do a bit of graduate work.

OLD BUSINESS: Doesn't really seem very old, but after all it was last June. That '24 cocktail party at the Copley, and the subsequent Alumni Banquet. Not much for quantity, about 18 of us there with a generous sprinkling of wives, but high in quality; Lehrer, Littlefield, Atherton, Barrett, Schooler, MacCallum — a goodly crowd. Bill brought the movies of our reunion and they looked just as good backwards as forwards, after a bit. Sometimes better. We sent a letter of condolence to Charlie Phelps who had just undergone the first of two operations in a nearby hospital. Charlie explained it in detail to Harold Hazen and your Secretary later on. Pretty involved business to pass on without a flock of charts and diagrams, but he was rather proud of the two long rows of stitching up each side of his spine. And he looked very fetching in a laced corset.

Still in the Old Business Department, we have a few of our 25th anniversary reports left over. In case you didn't get one, or want a second copy for the office (Frank O'Neil did, honest!) just drop a

line to your Secretary — \$7.50 as long as the supply lasts. After that, a collector's item. — HENRY B. KANE, *General Secretary*, Room 1-272, M.I.T., Cambridge 39, Mass.

• 1925 •

Our 25th reunion is now a matter of history and I believe that the whole affair can be considered a real success. The Class began to gather at the Griswold Hotel and Country Club in Groton, Conn., about noon on Friday, June 9, and although the major activities ended about noontime on Sunday, June 11, it was not until the following morning that everyone had started on his way, many in the direction of Cambridge to participate in the Alumni Day affairs. During the three days at the Griswold, we had in all a total attendance of 147. This included 86 classmates, 49 of whom brought their wives, 11 children plus Henry Williams' mother. All of those who attended the activities at the Griswold were unable to make the Alumni Day affairs at Cambridge although 56 class members were in attendance at some of the functions during Alumni Day on June 12. Seventeen of this group had not found it possible to get down to Groton.

For the official record, there follows a listing of all those who attended any of the 25th reunion functions. Course I: W. S. Colby, M. H. King and wife, G. N. McDaniel, Jr., and wife, E. D. McLaughlin, G. C. Myrick, F. M. Rice and wife, C. P. Worthington. Course II: R. C. Ashworth, wife, son and daughter, W. R. Blair and wife, H. D. Bevan, Harrison Browning, Henry Chippendale, F. J. Dolan, C. H. Duggan, F. W. Greer and wife, A. G. Hall and wife, T. A. Hayes and wife, Robert Hodson and wife, J. H. Howard and wife, R. E. Huthsteiner, W. C. Johnson and wife, D. F. Jones, Max Levine, wife, son and daughter, C. R. Mabley, Jr., H. F. McKenna and wife, N. D. Malone and wife, W. E. Perkins, J. H. Rountree, H. P. Sontag and wife, W. J. Squire, F. J. Turnbull and wife, F. E. Washburn, R. N. Wheelock and wife. Course III: F. L. Foster and wife. Course IV: Samuel Glaser and wife, Frances Hopkins, Mrs. J. E. Kennedy, Felix Winsor. Course V: Frederick Kranzler, S. C. Lane, Harry Newman, H. N. Sachs and wife, J. F. Walker and wife. Course VI: E. B. Alexander and wife, W. J. Allphin, T. H. Butler, W. L. Carroll, S. W. Davis, R. L. Dietzold, C. J. Enright, wife and son, David Goldman and wife, E. M. Lee, E. H. Mitcham, F. J. Mulcahy, E. C. O'Brien, C. A. Oliver, G. E. Rousseau. Course VI-A: S. H. Caldwell, M. N. Hanover and wife, E. E. Kussmaul and wife, Edward Lynch and wife, H. W. Williams, wife, mother and daughter, J. S. Woodward, Lynn Wetherill. Course IX-A: Mrs. L. A. Tripp. Course IX-B: N. H. Defoe and wife, C. A. Giblin and wife, W. J. Mahoney and wife, R. P. Price, wife and sons, M. G. Salzman and wife. Course X: W. C. Asbury, Scott Emerson and wife, P. S. Glasson, B. E. Groenewold, E. D. Murphy and wife, A. M. Sharp, G. V. Slottman and wife, L. C. Smith. Course XIII: G. B. Connard and wife. Course XIV: T. G. Coyle, wife and daughter, R.

N. Palmer and wife, Clarence Thulin and wife, H. F. Ware and wife. Course XV: C. W. Allen, L. B. Bragg, A. W. Crowell and wife, G. A. Drew, F. C. Foss, M. T. Freeman and wife, W. A. Gordon, L. T. Gregory, D. A. Henderson and wife, R. W. Learoyd, J. P. McCarthy and wife, R. A. Mitchell and wife, J. E. Russell, Samuel Samuelson, R. T. Seabury and wife, S. R. Spiker and wife, A. H. Stanton and wife, D. R. Taber, H. C. Trask and wife. No Course specification: Edward Zetterberg.

Of particular interest was the fact that Henry Chippendale traveled the greatest distance to attend the reunion having come up from the island of Aruba, Dutch West Indies. Bob Ashworth and his wife came down from their home near Fall River, Mass., by boat, while George McDaniel and his wife flew up in his plane from Texas. Fortunately, the Groton Airport was open and he was able to land within a few minutes ride to the Hotel Griswold. He continued on by plane to Boston for the Alumni Day affairs.

The Class of 1910 was having its reunion at the Griswold at the same time and H. E. Lobdell '17, Executive Vice-president of the Alumni Association, was the guest of the Class of 1910. We were able to steal some of Lobby's time so that he attended a few of the functions of the Class of 1925.

A complete detailed report of the reunion is being prepared by Ed Kusmaul so that it will be covered here very briefly. Following registration and dinner on Friday night, M.I.T. songs were enjoyed with Sam Caldwell at the piano and Henry McKenna and Cushing Foss acting as leaders. Following this we were given a real treat through the courtesy of Don Henderson and 20th Century-Fox who had arranged for us to have a preview of *The Gunfighter* starring Gregory Peck. On Saturday morning, June 10, directly after breakfast, more than 80 of us were taken up the Thames River to the United States Navy's New London Submarine Base, and we were royally entertained by the Navy for three hours, having an opportunity to see the test tank in operation, taking a tour through a submarine and seeing many of the ships. The Navy transported us back to the Griswold by bus and following luncheon everybody was pretty much on their own—some visiting the golf course, others enjoying the outdoor swimming pool and many just renewing acquaintances. A cocktail party was held at 6:30 that evening following which a class picture was taken and everybody moved on to the main dining room for the banquet. Following the banquet, a short business meeting was held and prizes were distributed to many of those in attendance. These prizes had been contributed by various members of the Class and are acknowledged below. The speaker of the evening, the Reverend John Fitzsimmons of the Plymouth Congregational Church, Belmont, Mass., was then presented. His story with a message told about an 8,000-mile ride of two light-hearted chaplains in the Army; one of whom was the Reverend Fitzsimmons who went A.W.O.L. through North Africa, the Near East and on to India. It is impossible

to believe that such a trip could have happened but it did and it can only be appreciated if you can hear it direct from the mouth of one of the participants.

After the Reverend Fitzsimmons' talk was completed the Class adjourned to the Cinderella Room for music and dancing and during the course of the evening the management of the hotel staged a millinery contest. A considerable amount of urging was necessary to inveigle eight of our worthy classmates to participate but this was finally accomplished and Jack Rountree walked off with the honors, making a very presentable piece of millinery with the material provided him in the allotted time. His efforts brought him a prize and then the management announced that each of the participants would receive a bottle of champagne with the compliments of the hotel. Needless to say, this had not been anticipated or we would not have had so much difficulty in obtaining entries.

Sunday morning, June 11, was devoted to more golf, swimming, sightseeing, and so forth. Shortly after dinner most of the class members departed.

The activities at Cambridge have been already covered in *The Review* and the only special events of the Class of 1925 were a get-together preceding the Alumni Banquet at the Copley Plaza, in a room provided by Tom Price, and the presentation of the class gift by Tom Price who graced the head table at the Alumni Banquet. We previously mentioned that a short business meeting was held during the reunion. Tom Price had previously appointed a nominating committee composed of Harrison Browning as chairman with F. W. Greer, R. A. Mitchell, J. E. Russell and W. N. Westland as members. This committee reported and nominated officers for the five-year period beginning June, 1950, and ending at the time of our 30th reunion in 1955. The report of the nominating committee was accepted and officers were elected as follows: President: Avery H. Stanton, United-American Soda Fountain Corporation 101 Walnut Street, Watertown 72, Mass. Vice-presidents: Donald A. Henderson, 20th Century-Fox Film Corporation, 444 West 50th Street, New York City; Carlton R. Mabley, Jr., 700 Guaranty Bank Building, Huntington, W. Va. Secretary-Treasurer: F. Leroy Foster, Room 5-105, M.I.T., Cambridge 39, Mass. Class Historian: Samuel H. Caldwell, Room 7-308, M.I.T., Cambridge 39, Mass. If you have any ideas concerning activities which the Class should be undertaking, you should feel free to contact any one of the officers listed.

Prizes and souvenirs were provided by a number of the members of our Class. Dr. J. F. Walker provided the Reunion Committee with a large number of glasses suitably marked indicating the occasion and they served as mementos for all those present. Tom Price provided very nice stationery portfolios which were available in sufficient numbers so that all those present received one. Jack Rountree provided a very nice welding blowpipe. Charlie Giblin came through with golf balls for the golf tournament, Melvin Shikes supplied record albums and Ed Kusmaul a mirror.

Other donations were as follows: From Herb Sontag, floor mats; W. J. Mahoney, candy dishes; Chink Drew and Myron Doucette, spark plug pump and tire gauges; Max King, pottery ware; Bob Ashworth, bridge cards and golf balls; Ralph Gow, knife sharpeners and oil stones; Max Jarman, shoes; Henry Sachs, fancy bottle openers.

A few days prior to the reunion, we received many messages from classmates who had hoped to attend. Ken Robie, I, had been one of the hard-working committee members working on program plans and he and Mrs. Robie were looking forward to attending the reunion. Approximately two weeks before the date, Ken was stricken with a mild heart attack which laid him up for several weeks so he was one of those greatly missed at the reunion. At last reports he was making a splendid recovery. Wally Westland had planned to be with us up to the time the reunion started, but a business trip plus family sickness prevented his attending. Had a note from Tony Lauria who normally makes his home in Chicago informing me that at the last minute he had had a business call to Havana, Cuba, in the interests of Sears Roebuck, so that he was unable to come. B. R. Hubbard, VI, who is associated with the Whitney Blake Company in Hamden, Conn., had definitely planned to get over for a few hours to the reunion but was unable to make it. He did drop in at the Institute a few days after Alumni Day and your Secretary had an enjoyable chat with him. Two of our classmates in Mexico definitely planned to be with us, Abe Silverberg and Frank Corliss, but business commitments prevented their coming at the last moment. Myron Doucette missed the first reunion since graduation and was greatly missed by everyone in attendance. He is planning on being with us for the 30th without fail. Irving Symonds, III, sent word from Mexico that he had many new responsibilities placed on his shoulders so that he would not be able to make the reunion. However, a few weeks ago, he unexpectedly dropped in to my office having been assigned by his company to a seven-week conference on work simplification at Lake Placid. Not having seen Sy for more than 15 years, the few minutes I had with him were far too short.

The length of this report is such that some news items which have accumulated will have to be held over for the next issue of *The Review*. There are still many of you from whom we had no replies in connection with our reunion notices. Other members of the Class have been inquiring for you. Can't you take a few minutes and drop your Secretary a line telling him what you are doing and any interesting facts that have occurred over the past few years? — F. LEROY FOSTER, *General Secretary*, Room 5-105, M.I.T., Cambridge 39, Mass.

• 1926 •

Greetings once again! Your Secretary is still writing the notes at Pigeon Cove on a Sunday morning and can report at least one new visitor during the summer; Sam Homsey left his architectural offices in Wilmington, Del., in charge of his archi-

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fect wife early in the summer and spent about 10 days in this area sketching and painting. Pete Doelger had a house here this summer and ran up from New York for several long week ends with his family. Pete and I tried our luck at flounder fishing in June, and it was good — but since then — well let's skip it. Speaking of fishing, I picked up a booklet on fishing tackle made from DuPont Nylon Monofilament and inside the cover was a full-page photo of Joseph D. Bates, Jr., "spinning expert and author," holding a 31-pound trout caught in an Idaho lake.

As usual, our Class had a good turnout for Alumni Day activities on June 12 and the following classmates attended: Robert T. Dawes, Robert C. Dean, Harry F. Howard, James R. Killian, Jr., John P. Larkin, Raymond Mancha, Stewart S. Perry, C. Marvin Pickett, Jr., Domenico Sicari de Amicis, George Warren Smith, Leon Task, Arnold Flint Taylor, Cedric M. Thompson, Cedric Valentine, Abraham White and John B. Wilbur. Lawrence G. Cumming and Joseph Levis were scheduled but for some reason were unable to attend.

The news clipping services brought in several items of interest about '26 men. Dick Parsons, President of the Quincy Electric and Power Company, accepted the chairmanship of this fall's Quincy Red Feather campaign. The article goes on to state that Mr. Parsons became president of Quincy Electric last March and this, too, was news for your Secretary. Congratulations, Dick, on both occasions — also on the fine family! (The article mentions that Dick, his wife, four daughters and one son live in Hingham.) Another news item tells of Rev. A. J. Riley preaching the baccalaureate to the graduating class at Boston College in June. More important, it included a photograph of Arthur; and since I have never met our ecclesiastical classmate, it was nice to see his picture — and a good-looking fellow he is! The Salt Lake City *Deseret News* tells of a speech given by Jim du Pont at the Salt Lake Kiwanis Club — you surely get around, Jim! A long clipping, again with photograph, from the Washington, D.C., *Star* tells of the election of Thornton W. Owen to presidency of the Washington Board of Trade. The article goes on to state that the new president is a V. P. and director of the Perpetual Building Association, a director in the American Security and Trust Company, the National Mortgage and Investment Company, and the Washington Title Insurance Company. Congratulations, Mooney, and, by the way, that was a good picture of you, too! Another announcement tells that C. J. LeBel spoke before the Cleveland section of the Audio Engineering Society. So much for the news clippings.

Several classmates have been kind and have written to your Secretary this summer. Excerpts from their interesting letters will give you an idea of their activities. First from Bill Latham who writes from São Paulo, Brazil: "For a vacation this year my boss, Robert Moser, has me down here working on a municipal planning study. It's quite interesting and refreshing to get away from the usual grind and see how other people do things. On the whole the engineers down here are a very com-

petent group. They build almost everything of reinforced concrete and on European standards. They use almost all hand labor but even so their prices are about 30 per cent lower than around New York. It takes them four or five years to complete a 30-story building. Last week end I went down through the hydroelectric development where they drop the water 2,100 feet. There are eight generators — each 66,000 kilowatts. It's a rather impressive establishment. The engineer in charge of construction is Adolpho Santos, Jr., '24. There are some 18 other Alumni listed in the Blue Book as living in São Paulo but I haven't had a chance to look them up. A couple of them, Gordon B. Morris '38 and George M. Ryan '36, are also in the power company with Santos. How are plans coming for next June?"

We have a communiqué from Jay Goldberg who writes from New York City where he is technical director for J. P. Stevens and Company, Inc.: "For one who likes to do a lot of writing, I have been quite negligent in keeping you supplied with 'boiler plate' for the class notes, but I DO read the 1926 notes regularly. As of about last October I gave up all speech-making due to a bad throat condition. I found it hard to keep my mouth shut, but since that was the most important part of the treatment, I managed to get in a few words by pad and pencil and gradually opened up with the vocal cords and resumed activities early this month by addressing the Southern Textile Association at Myrtle Beach, S.C., on June 2. I took advantage of the four-day Memorial Day holiday and drove down with my wife, Sylvia, and hurrying back to New York (via Williamsburg) apparently our haste was too great, according to the speedometer of the North Carolina state trooper who picked me up before I left the state. (Make it in R.I. next time, Jay, for we have an influential classmate there.) I speak to Cris on the telephone quite regularly (W. W. Criswell) but have not seen him for several months. Also, spoke to Ed Gohr briefly about a month ago, and Jim Offutt, called me about two weeks ago while he was passing through on his way back to Chicago." Jay, incidentally, has recently had a book published (*Fabric Defects* — McGraw-Hill) which is made up of a series of "case histories" accumulated during his work with textiles over the past 25 years.

Indirectly, we heard from Ed Roberts through a note that his wife, Ann, wrote to Jim Killian. When in New York she heard Jim on the radio program "Town Hall of the Air" and wrote to congratulate him on his address as well as his replies (and he deserved many congratulations for his superb presentation). In her note she mentioned that Ed is still in northern Chile where he has been for more than 20 years and is superintendent of the oxide plant for Andes Copper Mining Company. She also mentions that Ed is looking forward to attending our 25th reunion next June which is real good news.

Your Secretary saw Al Lamoureux at Dennison Manufacturing Company in June and has a message to relay to D. K. Taylor. Al now has seven children which puts D.K. out of the running for now. One evening in August while waiting for a train in Philadelphia, we telephoned

classmate Bill Vaughan who lives in Media, Pa., and got his word that he will be at our 25th reunion. George Edmonds visited New England this summer, stopping at the Oyster Harbors Club on the Cape. You will note that Jack Larkin's name is among those who attended Alumni Day. Jack is now located here where he is vice-president of Wetherell Brothers Steel Company in Cambridge. This sounds as though he were in the same kind of business as Ralph Head, our classmate out in Ithaca.

We have a communication from Al Dolben of interest to every man in the Class, which we will quote verbatim: "To the Class of 1926 — Important Advance Notice — The Occasion — 25th Reunion of the Class of 1926 — The Time — June 9 and 10, 1951 — The Place — The Griswold Hotel and Country Club, Eastern Point, Groton, Conn. A committee of George Smith, Pink Salmon, and yours truly made the selection after receiving notice from the Wianno Club, where we had such an enjoyable 20th reunion, that they would not be open as early as June 9 next year. For many in the Class outside New England, the Griswold will be more convenient than any places which were available. For many who were not able to attend the party at the Somerset Club after Jim Killian's inauguration, it will be the first opportunity to congratulate Jim in person. Make a note in your calendar now and we'll see you there."

There was so much accumulated news in the reservoir this month that your Secretary did not have an opportunity to ramble as usual and that's the way it should be. Keep the news coming — remember, it's not the length of your letter that counts — it's the mere fact that we hear from you. — GEORGE WARREN SMITH, General Secretary, E. I. du Pont de Nemours and Company, Inc., Room 1420, 140 Federal Street, Boston 10, Mass.

• 1927 •

As these class notes are written, your Secretary is still in London, but he will return in time to give you the latest news next month. — Arthur Willink, major, U.S.A., retired, was married in June to Ruth Evans. After a wedding trip to the West Coast, Banff and Lake Louise, they took up residence in Greenfield Center. Before his retirement, Arthur was stationed at Watervliet Arsenal.

The following is a caption under the photograph of Howard W. Page which appeared in *Sketch*, London: "A breath of freedom swept along Britain's roads when the result of American Mr. Page's plan came to fruition. Cars, new and old, with full tanks, emerged gaily to take the air in the finest weather in months. He conceived the idea in January last, and after extensive research into the possibilities of using sterling receipts for purchasing equipment in the U.K., submitted his plan to the Government on May 8. It was finally accepted on May 28. Forty-three-year-old Mr. Page, a director of the Anglo-American Oil Company, is resident representative over here of the Standard Oil Company, N.J. He was born in Berkeley, Cal., graduated from Stamford University and M.I.T."

3 The *Daily News Digest* of the Federal Power Commission of April 30 states that E. Robert de Luccia, a former Engineers lieutenant colonel, is now chief of the new Bureau of Power of the Federal Power Commission. He was in Course I, and apparently was with the Federal Power Commission prior to the war.

It is with deep regret we report the sudden death of A. Oakleigh Bush, chief sales engineer for the Norton Company with whom he was associated for 26 years. Shortly before World War II, he was acting manager of the company's plant at Welwyn Garden City, near London, England, for two years. — Frances Brohan, Secretary to JOSEPH S. HARRIS, *General Secretary*, Shell Oil Company, Inc., 50 West 50th Street, New York 20, N.Y.

• 1930 •

We are extremely happy to report that 77 members of the Class participated in celebrating the 20th anniversary of our graduation from the Institute. There were 64 of us at the Riversea Inn, Saybrook, Conn., for the class reunion on June 10 and 11. Thirty-two took part in Alumni Day on June 12, with 28 at the dinner that evening in Boston. To Hermon Scott and Jack Latham, chairman and treasurer respectively of the reunion committee, the Class is deeply indebted for the excellence of the entire week end.

For the benefit of classmates who were unable to attend we shall record here the names of the participants, listing last names only except where there are more than one with the same name on class rolls: Abbott, Hank Bates, Jack Bennett, Bjurling, Blackwood, Buerke, Canter, Chindblom, Clyde, Cohen, Cooper, Bart and John Delorenzo, Depoyan, Bill Dickerman, Diefendorf, Eaton, Edlund, Fahnestock, Fenton, Gassett, Halberg, Holland Hamilton, Elmer Harmon, Harrington, Bill Harris, Harrrs, Herbert, Holden, Phil Holt, Tul Houston, Howard, Hulett, Jarosh, Kingsley, Latham, Lawson, Lewenberg, Lister, Lord, Martell, McHugh, Mears, Myers, Bob Nelson, Nettleton, O'Connor, Osborne, O'Shea, Patton, Ralph Peters, Phelan, Phillips, Plant, Preble, Reynolds, Cedric Roberts, Rowzee, Russell, Savina, Scheuren, Hermon Scott, Shrigley, Greg and Myron Smith, Spahr, Starratt, Stein, Tarr, Torchio, Vanderwarker, Wadsworth, Weinrich, Stan Wells, Wigglesworth, Dick Wilson, and Zigler.

At Saybrook the customary golf and tennis matches were played. Herbert, Houston, and Vanderwarker were tied for first place in golf, while Wigglesworth defeated Kingsley in the finals of the tennis tournament. The reunion banquet featured movies of our previous reunions. Your present class officers were sentenced to another five-year term in office. A discussion concerning our next big get-together, the 25-year reunion in 1955, revealed preferences for (1) some spot along the Connecticut shore as the site, and (2) the attendance of our wives. The latter decision should make it possible for the co-ed members of the Class to attend with their husbands. A few statistics ob-

tained from questionnaires filled in at the reunion may be of interest. There was only one bachelor in the crowd. Children averaged 2.1 per family with five as the maximum number, and ranged in age from two to 22 years. We weighed an average of 174 pounds and exhibited varying percentages of baldness from zero to one-hundred. Membership in professional engineering societies indicated great diversification. Ed Harrrs from St. Louis came the greatest distance to attend and brought with him a son of high school age, a potential member of the class of 1958. Hy Stein and Charlie Abbott reported that their sons had just completed the freshman year at the Institute. The Rochester delegation took movies of all reunion activities and stills of each class member, while Jack Latham's Polaroid camera produced on-the-spot pictures for the amusement of everyone. Jack, deputy chairman of the Alumni Day Committee, chairman of its Banquet Committee, and now a vice-president of the Alumni Association, was seated at the head table at the Alumni Banquet and was loudly cheered by his classmates seated at the three 1930 tables.

Greg Smith has been appointed assistant general manager of Eastern Gelatine Corporation, which makes photographic gelatine for Eastman Kodak. Since moving to Marblehead from Rochester, Greg has taken a very active part in community affairs and was recently named as one of four members of the hospital building committee. Wallie McDowell is now head of all IBM engineering and research, with headquarters in New York City. Bob Poisson is the new merchandise manager for Pepperell Manufacturing Company. Howard Orville has become director of the Friez Instrument division of Bendix Aviation at Towson, Md. Word has been received that Harvey Weed of Springdale, Conn., passed away in July, 1943. Harvey was a student in Course XV. Webster Fisher was married last May to Jean Fiester of Rochester, N.Y. The bridegroom is a chemical engineer with Eastman Kodak. Ferdinand Rousseve, professor of fine arts at Boston College, has been named to the Massachusetts Citizens' Committee on Public Health. In Gardner, Mass., Ludwig Jandris is serving as clerk of works for a \$425,000 housing development for veterans. He was a captain in the Army Engineers in the recent war and is now a member of a construction firm in Gardner. George Nakashima of New Hope, Pa., is busily engaged in the design and manufacture of modern furniture in a home workshop. He has built his own house and shop. Classmates, particularly those from Course IV, will be well received if they have an opportunity to visit the Nakashimas.

From now until our 25-year reunion we hope that you will keep the Secretaries posted concerning items of interest to the Class. Please telephone or send your letters to any of the following — PARKER H. STARRATT, *General Secretary*, 1 Bradley Park Drive, Hingham, Mass. *Assistant Secretaries*: ROBERT M. NELSON, 2446 Iroquois Road, Wilmette, Ill.; ROBERT A. POISSON, 150 East 73d Street, New York 21, N.Y.

• 1935 •

Eighty classmates were on hand for the reunion at the Hotel Rockmere in Marblehead June 9 through June 11. Fellows from a distance included Carl Lavenas from the Argentine, enroute to Venezuela; Jack Ballard from Milwaukee; Elmer Szantay, Johnny Ryan and Paul Daley from Chicago and vicinity; Hal Bemis from Toronto; Jack Du Ross and Carson Brooks from Cleveland; and Johnny Best, Ed Taubman, Winnie Winiarski and Ham Dow from Baltimore and Washington. The Pennsylvania contingent included George Morrisette, Ed Millen, Jud Briefer, Mort Jenkins and Ruf Applegarth. New Jerseyites were Bud Taft, Ed Gregor, Jack Talbert, Paul Germond and Tom Blair. The New Yorkers were Hal Everett, Phil Johnston, Art Hamilton, Ed Gittens, Frank Trifari, Ben Benson, Bernie Nelson, Les Fitz Gibbon, James D. Parker, Ted Pomeroy and Don Taylor. The rest of us were New Englanders. At lunch time Saturday, Bob Granberg announced the results of the postal balloting for class officers. Jack Colby was re-elected to the presidency. Henry Kimball and Ernie Van Ham were elected vice-president and treasurer, respectively, and Bart Chapman retained the secretary's post.

A larger number of classmates than at any time in the past also attended Alumni Day activities; especially the banquet at the Copley Plaza on June 12. Those attending the banquet, making up two full tables, included: W. L. Abramowitz, A. R. Applegarth, Jr., A. H. Cohen, J. M. Colby, P. W. Daley, H. H. Dow, B. Dudley, L. J. A. Fitz Gibbon, G. P. Grant, Jr., B. H. Nelson, J. C. Quinn, T. J. Rinaldo, V. C. Sorrentino, E. D. Szantay, E. H. Taubman, F. F. Tone, and A. I. Zich.

Reunion publicity was responsible for a number of newsworthy letters from classmates. Major Louis Pflanz wrote from Heidelberg that the Signal Corps was keeping him too busy in Germany for a trip to the States. Charlie Debes, who has his own consulting firm in Rockford, Ill., planned to come, but couldn't at the last moment. Convalescence from a stint in the hospital kept Jack Orchard in New Jersey. Business in Indiana delayed Pete Grant's arrival until late Sunday. Don Wood wrote from London that he was in England for a British subsidiary of Reynolds Metals to oversee the construction of a ship to carry bauxite from the West Indies to gulf ports. Nelson Thorp reported that his real estate business in greater Boston was too active on week ends for a trip to Marblehead.

At least three of our number have deserted the ranks of the bachelors this summer. Eric Jones and Elizabeth Hanger were married in Beaufort, N.C., in August. Eric has an automotive parts manufacturing concern of his own, Delbar Products, Inc., near Philadelphia. Pat Mahoney married Vivian Jones in Wellesley in May. Pat lives in Trenton, N.J. Spencer Carpenter and Helen Ledyard of Scranton became engaged in June.

Ben Gruzen and his brother Sumner, M.I.T. '26, are participating in the design of a large housing project in Chelsea. Vin Ulrich, who has been very active in the field of radio and television engineering

since graduation, was recently appointed sales manager of a division of the National Union Radio Corporation, Union, N.J. Julian Bigelow is on the staff at the Institute for Advanced Study in Princeton and recently received a Guggenheim Fellowship Award for work in electronics computation. Ruf Applegarth and two associates have distinguished themselves around Philadelphia as founders of the National Aeronautical Corporation, manufacturers of electronic navigation aids for small aircraft. South of the border there is a firm of engineers, Technology Associates de México, composed exclusively of M.I.T. Alumni, 17 in all. Two are 1935 men, H. L. Gerard and F. M. Gallard. — J. BARTON CHAPMAN, *General Secretary*, 7 Lalley Boulevard, Fairfield, Conn.

• 1936 •

It may be somewhat of a surprise to many of our classmates to see the Class of '36 represented again in the "News from the Clubs and Classes." Actually, however, it has not always been easy to gather news. This is the first issue of *The Review* for the current season and the Class is very happy to be represented, if only sparsely, on these pages. This, by the way, is an important year for the Class — in preparation for our 15th reunion. We have a real job to do and all are urgently requested to co-operate.

Incidentally, the class registration for Alumni Day, June 12, 1950, was not too heavy. Congratulations to those who attended, however: Dana Devereux, William W. Garth, Jr., George A. Parkhurst, Paul H. Robbins, Ariel A. Thomas, and Roman I. Ulans.

Your Class President, Jack Austin, has asked, especially, that the following memorandum from him be included in the class notes: "It has been a long time since we have had news items from any of you. Bob Worden has agreed to take over the job of class secretary and he assures me he is going to haunt each and every one of you with requests for news so that '36 will be back with representation in *The Review*. Work has already been started on our 15th reunion and you will soon be hearing more about preliminary plans." Your Secretary might add hastily that Jack contacted him early last year to take over the job of class secretary-treasurer. Between a busy schedule personally and summer vacations, it has taken altogether too long to get organized. From here out, he pledges his constant vigilance — hearing from you once in a while is all he asks in return.

You will be interested in knowing that Fletcher P. Thornton, Jr., has accepted the assignment of reunion chairman. Elwood H. Koontz and Gordon C. Thomas — and all the rest of us — will be the committee. El Koontz and Gordon Thomas have volunteered to help Fletch Thornton. We shall need more assistance — so don't hesitate to speak up. The reunion will be at a place yet to be chosen, on Saturday and Sunday immediately preceding Alumni Day, 1951. Be sure to watch for additional class notes and other communications in order that your plans may be made as far in advance as possible.

These notes are in the nature of setting the stage for a reactivated program for the Class. From here on, in the December and subsequent issues of *The Review*, we shall attempt to bring you up to date on specific and personalized activities of our classmates. We shall expect to hear from many of you each month, and when we don't, we intend to do a little telephoning. In short, we mean business. — ROBERT E. WORDEN, *General Secretary*, Worden and Risberg, Fidelity-Philadelphia Trust Building, Philadelphia 9, Pa.

• 1937 •

Joe Heal and Bob Harris have provided your Assistant Secretary with the wealth of news that follows: Jim Newman of Booz Allen and Hamilton, Chicago consulting engineers, writes that he hopes to hear from us at times other than when we're looking for money. (Secretary's note: Jim told me later in Minneapolis that he is repentant for "roughing-up" our hard working Class Gift Committee.) Bob Rudy in New York City says he's quite busy trying to sell materials handling equipment. He has two boys who keep him busy on the side. Bill Wold writes that he has just left Convair aircraft sales and procurement after 10 years. He likes being "free" in his own business of consulting work. He says that Duane Wood has been transferred back to California from MacArthur Airport, Long Island.

Paul Stevens speaks for the group in the Rochester area in the Optical Society of America. They keep in touch with persons in the M.I.T. Physics Department by hearing its professors at national and local meetings of the above. The group included George Harrison, Arthur Hardy '18, Seibert Duntley '33, and Clark Goodman '40. Recently, Paul assembled a pair of 6 by 30 binoculars from war surplus parts and is making a small two-inch telescope for astronomical observations. Robert Hopkins is now a professor at the University of Rochester (Institute of Optics) and president of the local section of the Optical Society. Archver Ahmadian is now in Metuchen, N.J., working for C. F. Brown and Company, constructors of oil refineries. Very exhilarating and challenging work, his job is that of co-ordinating engineer at the refinery at Perth Amboy. He spent 12 months in Venezuela on a crude unit job and his family lived in Trinidad, only 45 minutes by air from the job. Spent holidays on the fabulous island of Tobago, an overnight boat trip from Trinidad.

Al Acker is in Pasadena in charge of a manufacturing concern making instruments for the Army and Navy. He has two boys and a great Dane. He relaxes by taking trips in his plane. Stan Zemansky is digging in to stay a while. At present he is assistant superintendent of aero-physics purchasing which is of quite a technical and scientific nature. On the side, he and Anne have been busy as beavers pouring concrete, building incinerators, a club house and a work shop at their home in Los Angeles. They hope to have things in shape by the end of the year. Jack Simpson writes that he saw Dick Young in Cleveland and that he ran into Karl Goodwin who happened to be wandering

out west of the Hudson. Ernest Ferris left New England about a year ago and is working for the Spring division of Borg-Warner Corporation on design and production problems of a one-way automotive transmission clutch. He's still single but in the mood. Its about a year since he's seen a member of the Class.

Harry Wallin graduated on June 30, 1950, from the Armed Forces Staff College in Norfolk, Va. He is now at the Sandia Base at Albuquerque, N.M., with his wife and three youngsters. W. D. Comley, after leaving graduate school in 1938, worked for the Crown Can Company in Philadelphia until 1940. He is now with Whitlock Manufacturing Company in Hartford, Conn., and manager of the Thermal Design division which mainly involves design of heat exchangers and allied equipment. He has two children, a girl four years old and a boy one year old. He would like to hear more about Course X. D. F. Tuttle, Jr., is now teaching electrical engineering at Stanford University. He has one child, a girl, Jermain F. Rodenhauser, for the past year, has been academic director of the Air War College, Maxwell Air Force Base, Alabama. Beginning this August, he is now a student at the National War College, Washington, D.C. His address is: 905 Chalfonte Drive, Alexandria, Va.

Robert F. Brown is married and has four children. From 1937 to 1945, he was field engineer and design engineer at Wright Aero Corporation, Woodridge, N.Y.; 1945 to 1947, sporting goods store owner, Colorado Springs, Colo.; and since September, 1949, assistant professor of mechanical engineering, University of Colorado, Boulder, Colo. He received his M.S. (Me.) degree at the University of Colorado in August, 1949, and is active in the Society of Automotive Engineers, Pi Tau Sigma, and Conservation (IVLA), Colorado State Reg. Engineers. William B. Burnet reports that he was knocked out for a year by polio, but is now making a comeback. Good luck, Bill, we're all rooting for you.

Paul Vogel is now married and has both a son and a daughter. At present he is manager of bottle sales for Plax, the fastest new packaging medium available. He was successively a business analyst at Standard and Poor's, methods engineer at E. I. du Pont de Nemours, Inc., and market research director at Hartford-Empire. Al Varrieur and Bill Bergen landed at Glenn L. Martin Company in June of '37 and have been there ever since. Bill reports that Jim Clifford sold Elco Cruisers after the war when he returned from Australia. After that, he worked in aircraft for a while and is now working for Temple Joyce in Philadelphia.

I wonder if many of you know that tall, genial Jim Thomson, our class president during our freshman and sophomore years, is the "Billy Rose" of the Class? Jim has turned Broadway Show backer and with considerable success, we hear. His address is unknown and it is just as well, since too many of the Class would take advantage of this situation and turn "Stage Door Johnnys." Bud Herbig is now with Ray-O-Vac Company in Madison, Wis. — WINTHROP A. JOHNS, *General Sec-*

retary, 34 Mali Drive, North Plainfield, N.J. WALTER T. BLAKE, Assistant Secretary, Research Products Development Division, Pillsbury Mills, Inc., Minneapolis, Minn.

• 1939 •

We lead off with congratulations to George Hulst who has just been promoted to the post of manager of the Special Projects Laboratory of the Electronic Parts division of the Allen B. Dumont Laboratories, Inc. Prior to his connection with Dumont, he spent three years in the License Division Laboratories of RCA, and before that two years with the Application Engineering Department of Tung-Sol Lamp Works, Inc. George also did development work on the proximity fuse for the Army. — Alumni Day festivities last June had as representation from '39 the following: Bill De Lia, Al Graffeo, Fred Grant, Jerry Gross, Sig Oettinger, Al Rugo, Don Scully, Seymour Sheinkopf, Herb Stewart and Os Stewart.

Dick Feynman has also been in the spotlight recently, his accomplishments being well covered in a release from the Public Relations Office of the California Institute of Technology from which we quote: "Dr. Richard P. Feynman, one of the outstanding young theoretical physicists in the world today, will join the staff of the California Institute of Technology next month as Professor of Theoretical Physics, Dr. Lee A. DuBridge, Caltech president, announced today." Since 1945 Dick has been a member of the Laboratory of Nuclear Studies at Cornell University. He was a group leader at Los Alamos during the war and made many important contributions to the development and understanding of the atomic bomb. In his nuclear work he has also developed what have become known as "Feynman's Diagrams," a technique which he originated and which has greatly speeded and simplified many calculations in the field of quantum mechanics. More recently he has made important contributions to quantum electrodynamics, our understanding of electrical phenomena within the atom. Dr. DuBridge said further: "The California Institute of Technology is fortunate, indeed, to be able to attract to its staff a theoretical physicist of such brilliant achievements and great promise as Dr. Feynman. His coming means that the Institute now has a well-rounded team of some of the ablest experimental and theoretical physicists in the country."

Johnny Gray during the summer received notification that he successfully passed the senior examination of the National Council of Architectural Registration Boards which enables him to become a registered architect throughout the entire United States, this being a select group of less than 500. John is at present a member of the Planning Board of the city of Salem and during the years of World War II, he was chief architect, working with the Bureau of Yards and Docks, on projects in Maine, the Maritime Provinces and the northern frontier.

A very interesting letter from Hal Seykota brings things more up-to-date from the West Coast. First mention is made of the arrival of Susan Louise, their second

child, the first girl. Among other changes, Hal is now working for the Portland Gas and Coke Company as sales manager of the By-Products division, which position ranges over a multitude of products and is proving very fascinating. Apparently Hal has seen Jim Barton, Ted Snow and John Alexander from Boeing and is planning contacts with the others of us in that vicinity.

Just missing the last issue came the reports on the wedding of Dick Leghorn in Rochester to Nancy Holtzman. Sully was reported to have sailed for the honeymoon on the S. S. *Coronia* of the Cunard Line being able to combine the wedding trip with a business trip for Eastman Kodak. Fred Schaller also took the step in the spring, marrying Anne Frances Knott of Brookline; they are now residing in Wellesley.

Two more class batchelors have recently been involved in engagement announcements, they are: Mike Herasimchuk to Jean Mary Rheiner of Bethlehem, Pa., and Hans Bebie to Astalyn Sundberg of Seattle, Wash. — STUART PAIGE, General Secretary, 701 Mill Plain Road, Fairfield, Conn. GEORGE BEESLEY, Assistant Secretary, Whittemore-Wright Company, Inc., 62 Alford Street, Charlestown 29, Mass.

• 1940 •

The 10th reunion of the Class was a great success. I am sure that all of those attending will back me up on this point. Those attending at the Cliff Hotel, North Scituate, with their wives were: Richard Babish, Maurice E. Baer, James L. Baird, John A. Berges, Richard Berry, Robert Bittenbender, W. Kenneth Bodger, Paul V. Bollerman, James Boulger, Jr., Donald G. Bry, M. Arnold Copeland, Harry N. Cottle, Jr., John L. Danforth, Bob Deutsch, Walter H. Farrell, James E. Fifield, David H. Fleming, Jr., Ollie Fulton, Richard D. Gerges, Thomas Goldfrank, D. R. Goodman, John R. Gray, Russell L. Haden, Jr., W. H. Hagenbuch, Fredyum Hendrickson, Jr., J. C. Jefferds, Jr., Paul O. Jensen, Leon Keches, Paul Keitel, Ed Kingsbury, Jr., Ralph Kochenburger, Frank Libman, David F. Lowry, John F. Martin, Gerald J. McCaul, William C. McDonald, John M. McKee, Jr., Robert W. McKinley, Robert G. Millar, Robert L. Millar, Augustus P. Norton, Jr., John J. Piotti, Jr., A. J. Powers, Jr., Daniel W. Puffer, William P. Ready, Richard G. Robertson, Walter F. Schuchard, Samuel Scott, Adolph L. Sebell, Harry K. Sedgwick, Bernard Stiff, Barrett L. Taft, Gilbert A. Tougas, M. A. Wight, Jr., George M. Wolfe, and H. Garrett Wright.

Also in attendance were: Alfred P. Barton, Edgar L. Bernard, Dan Blitz, Richard Braunlich, Harlan H. Davis, Douglas L. Eckhardt, Theodore A. Edwards, Milton Green, Robert Grosselfinger, Ralph Hayward, Robert Hess, John Kapinos, Richard S. Kendall, Wylie C. Kirkpatrick, Richard B. Lawrance, Marshall D. McCuen, Richard MacPhaul, John W. Meier, James H. Moore, Frank Penn, R. Robert Snyder, Philip A. Stoddard, George Weinbrenner, Joseph B. Wiley, Jr., Paul W. Witherell, and Samuel B. Wyatt.

The Reunion Committee, headed by Bob Bittenbender, did a grand job and the entire credit for such a successful time is due to them. Other members serving with Bittenbender were: W. H. Farrell, *ex officio*; Richard Berry, Secretary; Bernard Stiff, Treasurer; Russell Haden, Publicity; Walter Schuchard, Arrangements; John Danforth, Sports; M. Arnold Wight, Arrangements; Richard MacPhaul, Publicity. The committee received regrets from T. H. Talbot, Jr., Ed Crosby, George Carnrick, M. F. Biancardi, Peter Lackner, and Rowland Peak.

We drove some 1,200 miles to be able to attend the reunion and for our part it was very much worth the effort. Arriving on Saturday morning, we immediately began seeing many old classmates who, I must frankly admit, had become only cards in my files during the last 10 years. There were many close personal friends with whom we had been able to keep in contact over the past years. Then there were many whom we had never expected to see again; but we were able to pick up the lost threads and renew good friendships which had almost been lost.

Saturday night activities included a cocktail party, a chicken dinner, and dancing until midnight, followed by much reminiscing and renewing of friendships until early morning hours on Sunday. There was some golf and tennis played the next day but those of us who dared the water came out onto the warm sand much quicker than we went in. Most everyone turned out for the baseball game in the afternoon. This proved to most of us just how much older our Class is and what poor condition we are in compared to 10 years ago.

At the Alumni Banquet, 1940 was out in force and after seeing the uncontrolled enthusiasm of our Class, I know why they put us up on the balcony away from the more sedate classes. All in all, the 10th reunion was very successful and I am sure that everyone attending will give a rousing cheer to the committee for a job well done.

This is my final note, for after 10 years as your secretary and reporter, the job is to be handled henceforth by Alvin Gutttag. Before I close, let me add a word of thanks to those of you who have labored along with me to get some form of class news in *The Review*. Those who have not sent in some word of what they are doing, please do write to Alvin and help him to get out the news. My thanks to all of you class secretaries; Frank Penn, thanks; John Danforth, thanks; Herb Hollomon, Hap Farrell and Tom Creamer, thanks. To Alvin Gutttag the best of good luck; I am sure that you will be able to better fulfill this job than I, for I have often fallen far short of what the Class has a right to expect.—H. GARRETT WRIGHT.

As the new class secretary, I would like to thank Garry Wright, my predecessor, for his fine work, including the writing of this column for the November issue of *The Review*. I arrived home from a vacation today with two letters from Garry awaiting me. One informed me that the deadline for this issue of *The Review* was about due and the other had the reunion notes all ready for the printer.

I am sorry that I could not meet all of you at the reunion. I had planned to go, but was unable to leave Washington at the time. Please write to either the new Assistant Secretary or to me whenever you have any news concerning yourself or any other member of '40 so that we can have a column in each issue of *The Review*. — ALVIN GUTTAG, *General Secretary*, 7114 Marion Lane, Bethesda 14, Md. MARSHALL D. MCCUEN, *Assistant Secretary*, Oldsmobile Division, General Motors Corporation, Lansing 21, Mich.

• 1943 •

I returned from a very pleasant vacation in Ashfield, Mass., last week end, and found in my mail the reminder that class notes are again due. So after doing the minimum unpacking, putting the car into the garage still covered with mud from seven or eight states and happy to have an excuse for delaying to cut the grass, I resume chronicling the fortunes of the Class with much pleasure. As for myself, the summer was, as usual, busy at Champion, and inevitably hot and muggy in the Miami Valley. Some golf, a swim or two, interior house decorating, being master of ceremonies at a rally of Ohio State Republican candidates for election this fall, and a new assignment at Champion have been the high lights.

For the Class, I have been looking for a number of men to be appointed assistant secretaries, hoping that we can find one for each of the centers of 1943 population. Such a widely distributed "secretaryship" will facilitate the collection of our news, lead to a strengthening of the class spirit and help us to initiate a series of local reunions. At this writing I have received nominations for men to be appointed in the Boston and New York areas, and would very much appreciate nominations for other "1943 populous" parts of the country. Who do you think would make a good assistant secretary from your area? Send me his name, a little news about yourself and we will be on the way to establishing a more effective organization of the Class.

Unfortunately, it was not possible for me to be at M.I.T. for Alumni Day. However, the Class was ably represented by a delegation of stalwart characters. Among them were Nathan Acker, Gus Calleja, Bill Cochran, Charlie Crocker, Frank Dibble, Eugene Eisenberg, George Feick, Dick Feingold, Bob Hewes, Jim Hoey, Alvin Shairman, Ken Spencer, Bill Terry, Ken Wadleigh, Hans Walz, Ken Warden, Pete Wiesenthal, and Mike Witunski. If there were others present, I apologize for not recording your names.

In a note received from Hans Haac a few weeks ago he tells us that he has been transferred from Grasselli's New Jersey plant to Wilmington. He is still with the Grasselli division of Du Pont, and is working on accounting systems and clerical methods. He is much impressed with the glorious Du Pont Country Club with its 45 holes of golf and uncounted tennis courts. All this he says is "quite a change from the Jersey plant." Hans ran into Ward Haas who is at the Experimental Station in Wilmington.

Kemp Maples tells us that Steve Brodie is married and has been in Spain for three years. George Floyd left the Servomechanisms Research Laboratories at M.I.T. about a year ago and is now head of the computer group at Hughes Electronics. John Fiore, Jim McDonough, John Ward and Paul Travers are still at the Servo Lab. He says they are all "pops or prospective." And "big brewery man with lots of help on home brew Frank Bennett" is now living at Westgate in Cambridge. Barrie Mackenzie is general manager of Lenzer Corporation and is living in Buffalo; Phil Mork is with Raytheon.

While he was in Chicago earlier this summer, Charlie Crocker tells us that he saw Curt and Barbara Smith. Both, he says, are in fine health and spirits and their baby daughter Carolyn grows by leaps and bounds. Curt was recently promoted at Standard of Indiana.

Ken Wadleigh wrote to me saying that he hadn't much news, except that he has passed the Sc.D. exams and is now in the process of writing his thesis. He adds that he and Jeanne are "struggling with a charming old colonial house whose age varies from 0 to 200 years depending on the room you occupy."

We have more news of the fabulous exploits of Richard L. Bowen, Jr., in the famed land of Sheba. You will recall that some months ago I told a little about his part in an expedition into southern Arabia. He paid particular attention to the ancient Quataban irrigation systems. He was able to unearth much valuable information, his studies being described as "the most important single study of ancient irrigation ever undertaken" by William F. Albright, chairman of the Oriental Seminar at Johns Hopkins University.

I regret deeply to have to report that Raymond A. Dunn passed away on July 5, 1950. I do not know the circumstances of his death. I know that you will join with me in a deep expression of sympathy to his family and friends.

The former Helen Pansewicz and Cal Dunwoody were married in Saint Mary's Church, South Boston, on July 2. The couple are living in Rhode Island since Cal is a member of the faculty of the Rhode Island State College. Nearly two months later, on August 24, the former Jean Helen Farr and Jean C. Hartshorne were also married. The bride's home is in Stoneham, Mass., and she is a graduate of the New England School of Art and also studied at the New England Conservatory of Music.

It occurs to me that you will be interested in some of the men who have moved during the summer. Among the group are Francis Borden who is now in Shrewsbury, N.J., and Leonard Croan who calls Clifton, N.J., home. John Gratiot is in Darien, Conn., and home to Richard Henning is Pennsauken, N.J. Bogalusa, La., is where Carroll Horner is now living, and in Chattanooga, Tenn., you will find Edward Kane. James Miller is in Lynn, Mass., and Marjorie Smith is at home in Narberth, Pa. Jack Whitford has moved to Youngstown, Ohio.

And so until next month, so long! — CLINTON C. KEMP, *General Secretary*, 29 Verlynn Avenue, Hamilton, Ohio.

• 1945 •

Please, fellows, don't drop over in a dead faint! Your new class officers appreciate the dire need of rejuvenation in our Class and it is our sole desire to get the Class back on its feet in the next five years. It will not be an easy job to bring the "dead" back from the grave after five years, but we shall try our best and all we ask is the co-operation of you, our fellow classmates. The best manner in which you as an individual can help is to answer all class notices as well as to send us information about yourself, your family, and any classmates with whom you might have contact. You do your part and we will do ours.

The above is my sermon for today, now for the news. Where were all you fellows the week end of June 10? Really, you missed a bang-up time. Yes, although from the attendance point of view our fifth reunion was not a total success, it was more than a success for those of us who attended. Truthfully, we didn't do a darn thing but we certainly had fun doing it. To you "skeptics" the cost of the week end did not exceed the sums that were given in our reunion propaganda last spring.

The Mayflower Hotel at Monomet Point, south of Plymouth, Mass., really opened its doors wide to us and other reunion classes. We had excellent meals in our own private dining room, the finest cocktails, lively bull sessions, a "beer" ball, with the accent on the former, golf tournament, swimming in an excellent salt-water pool, plus shuffleboard, pitch and putt course, fishing, and what have you. I could fill several pages of this Review telling you about our stay at the Mayflower, but why don't you ask those who came: Joe Aguila and wife, Jack Atwood, George Bickford, Steve Eppner, Dave Flood, Pete Hickey, Bill McKay, Bob Maglathlin, Bill Martin, Bill Meade, Sandy Neuhaus, Al Oxenham, Max Ruehrmund, Clint Springer, Ed Stoltz, Chick Street, Bob Symonette, Lloyd Turoff, and Don Whitehead.

As set forth in the proposed class constitution, of which you will hear more later, and Alumni Association regulations, a class meeting was held during the week end for the election of class officers. I know some of you will accuse me of stuffing the ballot box, but I can assure you everything was on the up and up. As a result of the "stuffing" the following officers were elected for 1950-1955: Charles F. Street, President; Clinton H. Springer, Secretary-Treasurer; William J. McKay and Edward Stoltz, Jr., Assistant Secretaries. As said before, we hope to pick up the Class by the boot straps by dividing the work on class notes and so forth. How about some support!

Getting back to the reunion, most of us at the Mayflower adjourned to Cambridge and Boston for Monday's Alumni Day festivities where we were joined by: Chris Boland, Bert Bossler, Bob Bryant, Homer Elliott, Bob Fraser, Jim Gurney, Charles Hart, Rog Hood, Jim Hourihan, Dick McManus, Tom Markey, Warren Miller, Hedley Patterson, Pete Quattrochi, Waite Stephenson, Eddie Washburn, and Dick Winkler. Alumni Day was pleasant and I

feel that all of those who attended enjoyed renewing all Institute acquaintances as well as making new ones.

It would be difficult to bring you all up to date on your fellow classmates' activities in this one issue of *The Review*. I shall expound on what information I have received since reunion time and we shall sprinkle future issues with information received from you last spring in our "green sheet." Jake Freiburger, who is now in Dallas, Texas, as a "laundry man," became the groom of Katherine Lasater on July 23, 1950. After a honeymoon in the Caribbean Seas, they took up residence at 5200 Longview, Dallas, Texas. Bill Scott '44 was one of the ushers. On September 2, Ray Elmendorf and Pamela Goodwell of Roanoke, Va., were married. No details on the wedding but the last we knew Ray was working for one of the oil companies down in Jersey. Mr. and Mrs. David P. Flood announce the birth of a son, Roger Donald, on July 19, 1950. June Robinson of West Roxbury became the bride of Edward Kelly, Jr., on July 29. Ed is now associated with the Brookhaven National Research Laboratories on Long Island. Also on July 29, Mr. and Mrs. Leo F. Lawrence of East Greenwood, R.I., announced the engagement of their daughter, Helen Marie, to Chick Street of Bristol, our Class Prexy. By the time this is in your hands, they will probably be on their honeymoon.

I could rant and rave some more, but let me say "I'll see you in the next issue." — CLINTON H. SPRINGER, *General Secretary*, 44 Church Street, Bristol, R.I.

• 1946 (2-46) •

Since the last notes much has happened; and although some of the items have been carried through the summer, I'm sure that they will be interesting news to most classmates. With regard to engagements, Robert R. Dickson became affianced to Marie Altshefer of Washington, D.C. Others include: Dr. Roger Hickler (presently at Peter Bent Brigham Hospital) and Mary Lonsdale Green of Cincinnati, Ohio; John D. Whitehead, a lieutenant, j.g., and Patricia A. Talmeter of Auburn, Mass.; Robert J. Nolan to Marie S. Edmonds of Brooklyn; and Robert W. Mann to Margaret I. Florencourt of Arlington. Late summer engagement announcements are those of: Lieutenant Robert W. Noce, who recently completed a course at the Armored School in Ft. Knox, Ky., and Mary Louise Taylor of Elizabethtown, Ky.; and Donn Pennebaker and Sylvia Bell of Philadelphia. Donn is director of the Electronic Engineering Laboratories.

Of the many spring weddings, we have received notice of the following: Ensign John Metcalf and Helen Waterman of Albany, N.Y.; Norbert E. Smyth, Jr., and Eileen A. Riley of Pawtucket, R.I.; Ernest P. James and Lucille M. Lemire of Lowell (Tom Kelley was an usher); and Carlton A. K. McDonald and Mavis Fox of Kezar Falls, Maine. Carlton is a recent graduate of the Submarine School in New London, Conn. Jack Aitken was married to Marjorie L. Dorrud of Philadelphia; and Lou Wadel to Carol L. Hirsch of Dallas, Texas.

Classmates who were married in the early fall are: Bill Cahill and Mary A. Burke of Detroit, Mich., with Hank Morgan as best man; Don Sabean and Patricia Bateman of Coventry, England; and Walt Backofen and Elizabeth W. Warren of Orange, Mass. Walt got his doctor's degree in metallurgy at the Institute and is now an assistant professor there.

Classmates who checked in for Alumni Day in June are John Green, Herb Hansell, Mason Lappin, John Marr, Bob Nelson, and Bill Phelan. At the time, your Secretary spent a pleasant evening at an informal gathering with John Green, Clarence Lyon, Rog Sonnabend, Ned Tebbetts, and Ted Heuchling.

Talking about Alumni Day, probably you have received first notice of plans for our five-year reunion which comes up next spring. The work so far has been carried on by a nucleus group in this area appointed by Class President Herb Hansell to get the ball rolling. As their activity expands, classmates throughout the country will be called on to organize and tub-thump in behalf of the festivities.

Dr. Jack Haverback is now interning at San Francisco Hospital after having been graduated from Johns Hopkins. Along with this news item was the information that the Haverbacks have a daughter, Susan Elaine, who was five months old in July. Eugene Fields has become vice-president of the chain of Fields Shops, department stores, and is credited as being a driving force in the organization. Ernest Spence was awarded one of the three Faith Awards presented by the Brotherhood Council of Boston University.

Steven James Craig, 2d, was born on May 24. Your Secretary has spent a busy summer getting acquainted with him! — JAMES S. CRAIG, *General Secretary*, 387 Harvard Street, Cambridge 38, Mass.

• 1947 •

As the old saying goes, "The road to Hell is paved with good intentions"; and your Secretary is well on his way after accomplishing so little of what he promised himself he'd get done this summer. Be that as it may, the newsletter — long-awaited, we hope — containing a compilation of all the statistics in the questionnaires we sent out many months ago, is under preparation. The quantity of returns was a trifle disappointing as only 249 degree-receivers answered with 17 non-graduates replying; but the quality and response was most encouraging. Some classmates as far away as Norway, the Philippines, Australia, England, and South America took the trouble to fill out the little form and return it. Anyway, you'll all be getting the news soon.

Until that letter appears, these notes should keep all of you up on current happenings. Our party at the Copley Plaza on Alumni Day was a wing-dinger. The guest register lists the names of the following stalwart '47 men: Jerry Cox, Harry Light-hall, Walt Kisluk, Fred Ehrlich, Art Schwartz, Parker Symmes, Jack Rizika, Wally Lack, Ken Marshall, Mort Loewenthal, Bob Bryant, Tom Cooper, and of course, yours truly. The 10-year class, 1940, honored us with the presence of Dick Berry, Bill Green, Bill Schuler, and

W. F. Schuchard, Teddy Walkowicz '41, Carl Zeitz '42, Bill Cochran, Bill Terry, and Mike Witunski of '43, and Phil Whitaker '44, helped swell the ranks. The contingent from '45 included Al Shelby, Pete Quattrochi, Bob Symonette, Chris Boland, Sandy Neuhaus, Jim Gurney, Clint Springer, and J. C. Conroy. The Class of 1948 sent us Ronny Kallman, Larry Levy, Bob Loewy, John Dugundji, John Kirkpatrick, Rosemary Durnan, Walt Mindermann, Phil Horrigan, Sam Russell, Bill Joyce, Art Waxman, Bill Ayer, and R. W. Souza.

Ruth Norton and Phil Lynn from '49, and Pete Hajian '50, complete the list of guests. We must not forget, however, our honored guest, George Barbelman Spitzkopidos, who listed himself as being from the Class of '00 to '50 inclusive, which gives us claim to brag that ours was the only Alumni Day party attended by a member of every class since the turn of the century.

Fortnight ago I received a hurried post card from Myron Thomason which reads: "I've done it again — joined the Army after two years in the Marines. Hope the Class of '47 can get together without me. Afraid I can't make it." His address is: Lieutenant M. M. Thomason, Company H, 86th Infantry Regiment, Ft. Riley, Kansas. A birth announcement from Walt La Force states that Judith Anne, a blonde, blue eyed, "just right" girl arrived on August 8. Mother is very happy and doing nicely, while Father is expected to recover.

Now to catch up on the late tidbits of news. Bob Auriema is a member of the management section of the Staten Island Symphony Society which seems to take up a good bit of his spare time. Both his parents are active participants in the group. Walter Pierce will be continuing his architectural studies at the École Nationale Supérieure des Beaux-Arts in Paris on a Fulbright grant. He received his M.Arch. degree with our Class. Joseph Nordstrom has accepted an assistant professorship of business management at Clark University in Worcester, and Eli Perry has been appointed an assistant director of research at Monsanto Chemical Company's plastics division in Springfield.

Summer engagements that we have word of are those of Leon Weinberger to Greta Stovsky of Cleveland Heights, Ohio; Joseph Profita to Margaret Dudley Hall of Wollaston; Joseph Farrell to Winifred Therese Sieger of the Bronx, N.Y.; Don Harleman to Martha Jane Havens of Honaker, Va.; Vince McKusick to Nancy Elizabeth Green of Leominster; Ted Dyett to Adrienne Inez Murray of Watertown; and John Bradley to Jane Dysart Carpenter of Malden.

Bill Esthimer and Shirley Elizabeth Garner of Norwood; George Sawutz and Jeanne Frances Talbot of Glen Ridge, N.J.; Bob Rediker and Jane Susan Friend of Rego Park, N.Y.; Stu Farnum and Gloria Hastings of Great Neck, L.I.; Bill Driscoll and Helen Mary Caffny of Lawrence; and Joe Berberich and M. Patricia Higgins of Lawrence are the couples who became man and wife during the summer months. — CLAUDE W. BRENNER, *General Secretary*, Room 33-316, M.I.T., Cambridge 39, Mass.

Many of the engagements announced to us throughout the summer, we feel certain, have already culminated in marriage; and, as this news is received, it will be passed along to you. As far back as April, Robert Welsh, now with the Ludlow Manufacturing and Sales Company, was engaged to Margaret Stueck; Richard Berry, a development engineer at the Rogers Corporation in Goodyear, Conn., to Louise Spaulding; Graham Sterling to Judith Anderson; John Limongelli to Olga DeMasi; and Carl Petersen to Lorraine Lee. May brought engagements to William Emrich and Mary Louise Wright; to Bill Buckley and Therese Ecker; to Ed Powsner and Rhoda Lee Moskovitz, who are both attending Yale University Medical School; to Joseph Fantone, now with Stone and Webster, and Jeanette Dennehy; to Henry Howland, employed as a textile engineer by M. T. Stevens Company, and Joan Ruth Nill; and to Philip Skove, with the Hydraulic Equipment Company, and Ellen Haebler. Coming to June, we learn that John Winninghoff, with Alcoa, is engaged to Louise Debevoise; William Troy to Isabel Evelyn Gudas; Francis Jablonski, a physics professor at Notre Dame University, to Joy Campbell; and Peter Johnson, a lieutenant, U.S.N., to Janet Dant. In July, Bob Sandman was betrothed to Guitelle Charlotte Hurvitz; and Bob Miller, employed as a chemical engineer at the Paulsboro Refinery of the Socony-Vacuum Oil Company, to Georgiana Hutchinson. The only August announcement received to date is that of Donald Nelson's engagement to Jane Wilson Scott of Boothbay Harbor, Maine. Nelson is presently employed as an aerodynamicist for Lockheed, doing performance, stability and control work.

Class members who actually took the big step and were wed since our last writing include the following: In April, Peter Bolan, currently associated with Pratt and Whitney Aircraft, was married to Ruth McCarty; Edward Mason, now an assistant professor of chemical engineering at M.I.T., to Barbara Jean Earley; Lieutenant William Horton to Grace Giannetti; Warren Johnson, an engineer in the highway department of the New York Department of Public Works, to Ann Johnson; Merle Andrew to Alice Hale; and Richard Snow, a chemist with the Hood Rubber Company, to Carolyn Smith. May saw the wedding of Hugh Craigie, auditor with Sylvania, to Nancy-Ray Goldthwait; of David Shaw, with the architectural firm of Paul Kea Associates, to Gretchen Van Tassel; of Bill Bommer to Shirley Collens; of Russell Stevens to Patricia Thayer; of Lawrence Manoni, in the research division of United Aircraft, to Barbara Jane Roser; of Francis Miller to Louisa Maria Macchiaverna; Tom Jabine to Marian Brandon; of Thomas Kirkham, a technical engineer with Carbide and Carbon Chemicals Corporation, gaseous diffusion plant, to Lois Jordan; of Herman Clifford Carlson, an electrical engineer with the Boston and Maine Railroad, to Betty May MacDonald; and of Charles H. Meers to Virginia Tapscott.

In June, the traditional month of weddings, Frederick Radville, now a chemi-

cal engineer with the Eastman Gelatine Corporation, took as his bride Dorothy Ann Weafer; Harold Knapp, associated with the Operations Valuation Group of the Navy Department in Washington, was married to Barbara Baldwin; William Helfrich, an analytical engineer at Pratt and Whitney Aircraft, to Margaret Hazen; Jesse Haines, a research engineer at DuMont, to Alice Relyea; Georges Dube, currently a graduate student at Yale, to Jean Marie Foley; John Walsh to Zelda Sofman; Harlow Farmer, a research associate at the Woods Hole Oceanographic Institution, to Sue Shafer; George Cooper, currently attending Harvard Law School, to Nancy Misson; Richard Worrell to Betty Jane Winberg; John Burdick to Mary Elizabeth Woodard; Bill Oard, employed by Modern Talking Picture Services in New York, to Lorna Steele (Dick Cleveland, also of '48, was best man); Curtis Brown to Ann Hayes; Fred Monosson to Gloria Haskins; Frank Viera, now at the Bureau of Standards in Washington, to Dorothy Peaslee; Robert Townsend, a chemical engineer with Petro-Chem Development Company in New York, to Ann Ryder; Robert McDonagh, engineer in the Massachusetts State Department of Public Works, to Rita Fillion; John Rowen to Ann Bulger; Leon Groisser, who received his master's degree in business administration at Columbia University in June, to Lilah Horne; and finally, John Weil to Joan Landis. John, after finishing at Technology, worked at Brookhaven National Laboratories for a year and last fall entered Cornell to study for his Ph.D degree in nuclear physics. He has received an Atomic Energy Fellowship—a rather unusual distinction, we think, for a Course XV man!

In July, we received word of still more marriages: Bob Garbutt, who went on to receive a B.A. degree in psychology from Rollins College, to Carolyn Beattie; Ken Drott, a chemical engineer with Dow Chemical Company, to Florence McCarthy; Peter Balise, teaching at the University of Washington, to Joan Ort; Norman Frank Nau, development engineer at the Union Twist Drill Company, to Ruth Katherine Canning; Bob Crane to Libby Novak; Robert Horn to Shirley Ann Lapp; Jack Levedahl, who has been doing graduate work in Zurich, Switzerland, and at the University of Maryland, to Charmain Scates; Henry Baer, a chemical engineer with Remington Rand, to Florence O'Meara; Art Teager to Gloria Sahagian; Robert Andrew, employed as an electronic engineer in Washington, to Myrtle Sawyer; and Martin Billett, now with the Southbridge Finishing Company, to Gloria Forman. Congratulations and our very best wishes to you all.

Notice has been received, too, of the birth of a first son to Mr. and Mrs. Al Yurgelun of Naugatuck, Conn. Al is presently associated with Chase Brass in Waterbury as an engineer.

Your secretaries regret that they were both unable to be present at Alumni Day, June 12, for we understand a fine time was had by all. The Class of '48 was well represented, however, by Stan Abkowitz, Stanley Adelstein, Bill Ayer, Martin Billett, Ben Brettler, Albert Carr, Mark Con-

nelly, Albert Davidson, Alan Davisson, Victor Dawson, John Dugundji, Rosemary Durnan, James Hourihan, Bill Joyce, Ronnie Kallman, Bill Katz, John Kirkpatrick, Norm Kreisman, Dan Lanciani, Lawrence Levy, Bob Loewy, Stephen Miller, Walter Mindermann, Ed Powsner, Sam Russell, Richard Souza, and Art Waxman.

A nice letter was received from Werner Gumpertz, who in September became an instructor (Course XVII) at the Institute. Werner reports having seen both Milton Robins and Tom Pawel of late. Both are still in the Boston area, the former being employed by United Engineers and Constructors in Worcester, and the latter a student at Harvard Business School.

There is much more news; but because of the space limitations imposed by this being the first Review of the current year, it will follow in the December issue. We still plea for letters, clippings, postcards, *anything* containing news of our class members. — WILLIAM R. ZIMMERMAN, *General Secretary*, in care of Kurt Salmon Associates, Inc., 3000 Albemarle Street, Washington, D.C. RICHARD H. HARRIS, *Assistant Secretary*, 19 Lancaster Street, Worcester, Mass.

• 1949 •

From Dave Kellom we hear: "Bumped into Dick Pitler several times at the Alumni Pool. On the last occasion back at the New England Intercollegiate meet in March, he was expecting to return to civilian life, after a year of active duty at the Watertown Arsenal, within a few weeks. Paul Hurlbut, who had been with the Signal Corps at Fort Monmouth, was in a similar position. Another swimmer, Ford Miskell, was married last September and is now living in Cleveland. As for the chemists, Herb Hershenson and Ed Cluff have continued studying at Technology for their doctorates. Art Kirby joined me making Columbia University our new lab address. Personally, I received my M.A. this June and am now working on a Ph.D. A month ago my engagement was announced [see below]. Hope this will stir others to take pen in hand and disclose their doings for others to see, in particular the swimming gang of '45-'49. What has happened fellas?"

The above expresses a desire many of us have and is an excellent example of how to satisfy it. To date all my information has come from a clipping service and from word of mouth. The latter unfortunately means material about friends and friends' friends. Since it is impossible to have such a connection with all members of '49, this method cuts out a large segment of our Class. So do drop me a line now and then. Any suggestions to increase our supply of news would be appreciated.

John Donner "considering the present radio repair establishments are not equipped to repair television" has founded the Northeast Television Corporation in Brookline Village for the single purpose of serving television. Robert Pullen, a professor in the Colby College economics department spoke before the Exchange Club of Waterville, Maine, on the Wagner Act faults. Robert Hendrick is a meteorologist with Pan American Grace Airways in Lima, Peru. Before the American Institute

of Mining and Metallurgical Engineers, Robert Decker showed a film of Angel Falls, Venezuela, at the Hotel Sheraton, Boston.

Stanford Hartshorn received a Master of Business Administration degree at the University of Michigan. Dave Hardin received an M.A. in Business from the University of Chicago. Charles Conlon was a member of the 1950 graduating class at the United States Naval Academy. Leon Lobdell received the M.Ed. degree at St. Lawrence University, John Carr, 3d, was awarded a Fulbright Grant by the State Department to study mathematics at the University of Paris, France.

At the Alumni Day festivities we saw Jack L. Baker, Ernest Barriere, Charles Carver, Mary Davison, John Ely, Richard French, Philip Lynn, Francis McCarthy, Walter McSweeney, Thomas Martin, Howard Millard, Mary Norton, Joseph Pigott, and Harrison Thibault.

ENGAGEMENTS: Donovan Beachley to Mary Canan of Wilkesburg. John Bergin to Joan Hynes of Boston. Stephen Bragg to Maureen Roberts of Darlington, England. Charles Currie to Norma MacLeod of Quincy, Mass. Malcolm Dick to Mary Lithgow of Morristown, N.J. Nisson Finkelstein to Rona Glassman of Boston. Manuel Gassman to Elaine Goldberg of Mattapan, Mass. Frank Haws to Doris Spindle of Auburndale, Mass. Yours truly to Shirley Sommer of Rockford, Ill. Paul Johnson to Ruth Durnan of West Roxbury, Mass. Dave Kellom to Jean Purinton of Beverly, Mass. Stan Loomis to Carol Pope of Newark, N.J. Kenneth McGrath to Marjorie Wiecking of St. Paul, Minn. Burt Mendlin to Polly Rider of East Greenwich, R.I. Fred Newton to Caroline Harrison of Danville, Va. Raymond Oransky to JoAnn Rothenberg of Nashua, N.H. Chester Patterson to Jean Parsons of New Bedford, Mass. Sheldon Roberts to Patricia Wiseman of Allston, Mass. Francis Sayles to Dorothy Holm of Dorchester, Mass. Lt. Samuel Shor to Dorothea Kissam of Princeton, N.J. Sherwood Stockwell to Mary Cameron of Pittsburgh, Pa.

WEDDINGS: Frederick Beutler to Abigail Caplan on June 21 in Boston. Walter Bloecher to Virginia Feltham on July 15 in West Springfield, Mass. Walt is with Esso Standard Oil. Charles Brekus to Priscilla Humphry on June 22 in Ayer, Mass. They will live in Upper Montclair, N.J. Richard Cotton to Joan Katzman on June 25 in Boston. Theodore Foster to Thelma Detweiler on June 17 in Wilmington, Del. Paul Gadebusch to Janet Lenfestey on May 13 in Summit, N.J. Melvin Adams and George Motzenbecker were ushers. They will live in Sewell, N.J., where Paul is with Socony Vacuum. Robert Hair to Millicent Hecht on July 8 in Bath, Maine. Jared Huggett to Pauline Kelly on April 27 in Quincy, Mass. Francis Harrington to Elizabeth Bullard on May 14 in Boston. Robert Kelleher to Eileen Hamilton on July 29 in Springdale, Conn. Otto Kirchner to Madeline Foote on June 7 in Concord, Mass. Kemon Taschioglou and Charles Holzwarth were ushers. They will live in Cambridge while Otto completes

his course at Harvard Business School. Raymond Lammi to Helli Tallgreen on July 15 in Fitchburg, Mass. Ray is with Sylvania Electric in Danvers, Mass. James Louis Marshall to Maud Wells on July 15 in Palmyra, N.J. Jim is teaching at Columbia in the electrical engineering department. Lloyd Marshall to Ida Kihn on June 25 in Plainfield, N.J. They will live in Dayton, Ohio, where Lloyd is with Dayton Malleable Iron Company. Austin McGuire to Irene Krofsky on June 4 in Springfield, Mass. Alan Postlethwaite to Mary Machlup on June 17 in Belmont, Mass. Al is with Gillette Safety Razor. Richard Reed to Joan Murray on June 10 in Weymouth, Mass. Both are employed by meteorological research at Technology. James Sableski to Eleanor Kambour on July 1 in Boston. Best man was Louis Basel. Jim is employed by American Paper Goods, Kensington, Mass. Harold Salwen to Marie Kopman on June 11 in Far Rockaway, N.Y. Frederick Schneider to Nancy Harris on June 3 in Wellesley, Mass. Vernon Turnburke to Marilyn Simons on June 2 in Pittsfield, Mass. Vernon is with International Harvester, St. Paul. Bernard Wasserman to Marcia Gwirtzman on June 17 in Rochester, N.Y. He is working for a Ph.D. at the University of Wisconsin. — **CHARLES WILLETT HOLZWARTH, General Secretary, Mellon BC-44, Harvard Business School, Soldiers Field, Boston 63, Mass.**

• 1950 •

For the past four years our Class has been cooped up in the Institute on the Charles. Now a thousand strong, they have received their diplomas and gone out into the four corners of the earth to prove their worth. Have you been wondering what has happened to your classmates since graduation? Well, now you have a way of finding out. Tune in to this column each month and see what is going on. Of course, I do need a little help from you, the members of the Class. Have you become engaged? Did you get married? Have any children? Change jobs? Get fired? Been promoted? Had a good poker game with the boys? Anything that might be news to the men of '50 should be forwarded to me and I will see that it gets in the class notes.

Now for some of this news of the Class. First of all, I'd like to announce my engagement to Ruth Mallowney. But I wasn't the only one to become engaged during the summer. The following are a few of the engagements I have found out about: Kenneth Roberts to Norma Lindstol, Richard Lang to Betty Lee White, Ralph Quinlan to Kathie Bennet, Harold Noreen to June Ruth Smith, Robert Erickson to Asrid Ulson, William Corcoran to Dorothy Kane, Richard Rockstroh to Helan Ketola, Leonard Sayles to Risha Levine, Paul Butler to Frances Sowles, Robert Stebbins to Elenor Fairchild, Clayton Williams to Dawn Parsons, Frederick Adams, Jr., to Ethel Curran, Pressley Jones, Jr., to Barbara Gregson, Frederick McGarry to Alice Reilly, Richard Hartline to Harriet Dicke, Herbert Federhen

to Verne LaPorte, Richard Haltmaier to Margaret McDonnell, Eli Goodman to Sybil Pressman, Lewis Berger to Judith Slepian, Jack Cord to Lizzy. (Sorry, can't remember Liz's last name, Jack, but if you drop me a line maybe you can tell me that her name is now Cord.) Of course I know that there are many others that are now engaged and that many of those listed are now married. But don't be bashful, write and tell us about yourself.

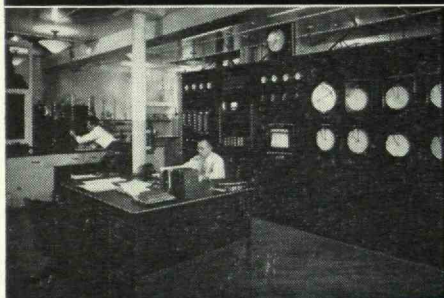
I think Len Caro was the first to be married after receiving his degree. Len was married to Mary Collins just a few hours after graduation on June 9. The Marriage License Bureau was quite busy over the summer as witness the following long list of men of '50 who took the fatal step: Robert Mann to Margaret Florencourt, Allan Shaw to Marie Coles, Norton Belknap to Mary Lonan, John Anson to Martha Meyer, Richard Butterworth to Jean Peters, Thor Kristian Stromsted to Florance Showers, James Kenney to Sheila Conway, Allen Light to Edna Stacey, Robert Burke to Estelle Katen, John Clark to Claudia Hutchinson, William Farmer to Doris Dienst, Edward Friedman to Esia Shoag, Alan Gleason to Emily Gilbert, Irvine Williamson to Ethel MacMillan, John Harrington to Mary Brown, Louis Osborne to Isabel Innes, Frederick Johnson to Marilyn Harley, David Holmes to Martha Roope, Harrison Campbell to Joyce MacDonald, Roger Graham to Polly Jo Anderson, John Bogert to Phyllis Bennett, Donald Newhouse to Leila Kirshen, Louis Young to Constance Kennedy, Nestor Anderson to Janice Tate, David Laity to Mary Jane Work, Robert Massard to Ann Connor, Warren Lee to Elizabeth Bradway, Nat Roossin to Harriet Weiner, Henry Ferguson to Beverly Anne Terry, William Peppler to Helen Hodges, Rene LeClair to Pierette Bougie, and Thomas Eggert to Audry Joan Grossart. Oh, I mustn't forget that one of our co-eds got married. Virginia Grace Stevens was married to a Navy man, Lieutenant Rufus Clayton Small.

I've already received letters from some of the boys telling of their whereabouts and I think I'll pass on some of the news to the rest of the Class. Sigmund Holmgren is having a grand time out in California with the Irrigation Department. Dave Vollmer writes that he is in the "Crystal City" of Corning, N.Y., learning all about the glass industry. Nano Romaguera is in Cali, Colombia, helping his uncle set up a new sugar factory. Big-Jim Baker is working for Ray-O-Vac out in Lancaster, Ohio. George Nez has a position with the Minneapolis Housing and Development Agency. Albert Shortell is with the Chrysler Corporation in Detroit.

As for news about me. I had been working for a contractor in Cornwall, N.Y., but Uncle Sam sent me my notice to report for duty on September 28. Just when I was getting used to freedom, too. But mail your letters to the address below and they will be forwarded to me. Be seeing you all on the chow line. — **JOHN T. WEAVER, General Secretary, 1772 East Tremont Avenue, New York 60, N.Y.**



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to
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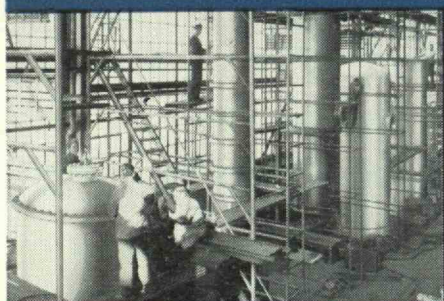
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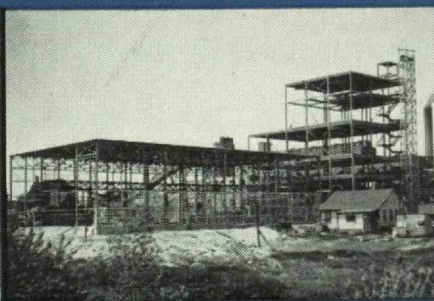
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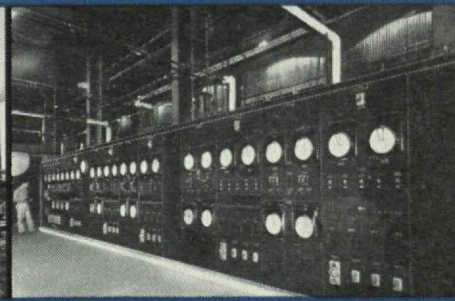
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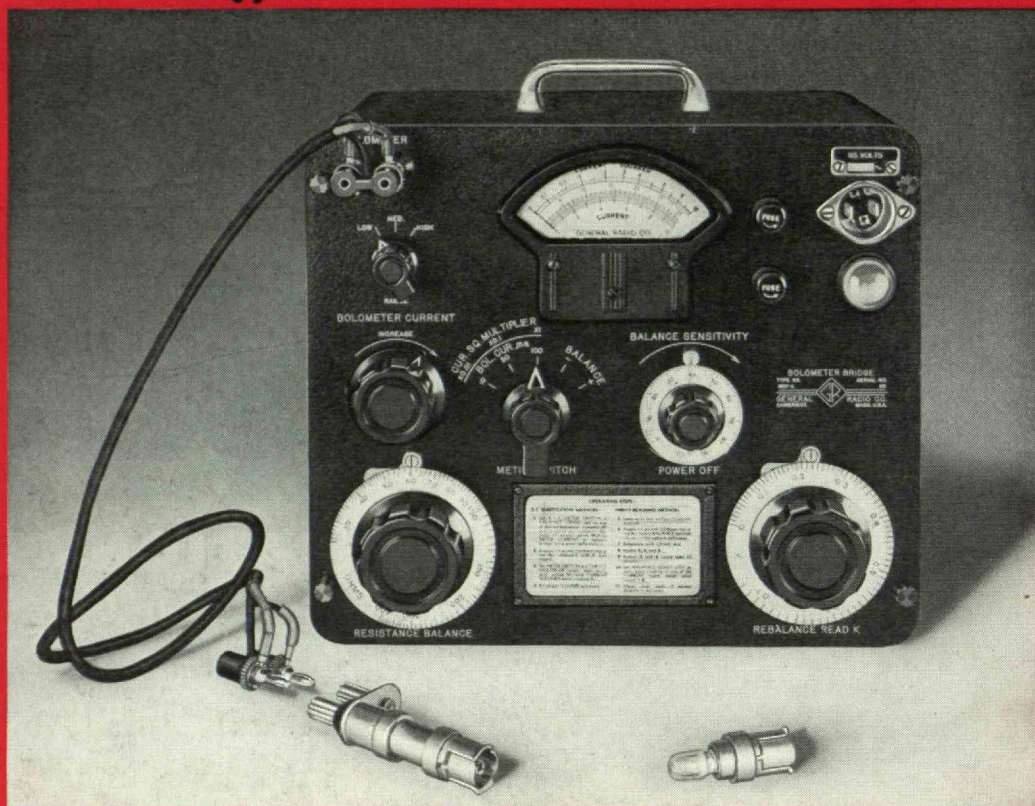
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